Southwestern AVIATION

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THE COVER:

THE new Boeing 247-D, scheduled to fly this month in the MacRobertson London-Melbourne speed classic, with Clyde Pangborn and Roscoe Turner at the controls, averaging 204.6 miles per hour with its two 550-horsepower super-charged, geared Wasp engines on the non-stop flight from Seattle to Los Angeles. Over the transcontinental route, the new airliner averaged 191 miles an hour with stops at Wichita and Pittsburgh.

The new Boeing, which will be flown by Pangborn and Turner in the air derby, was shipped on the Europa September 19. United Airlines took delivery of ten of the new 247-D's in September. The MacRobertson entry, with the exception of additional gasoline space, is identical with the stock models.

NRA MEMBER U.S. WE DO OUR PART

Southwestern AVIATION

20

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The Prize
Letter of the Month

Salina, Kansas,
Sept. 11, 1934.

Editor, *Southwestern* AVIATION,
Ledger Building, Fort Worth, Texas.
Dear Sir:

On November the first, 1929, we bought our first airplane. At that time the executives of our company realized the necessity of having an airplane for the transportation of company officials. Our properties and holdings, namely gas wells and natural gas pipe lines, were in various parts of the State and an airplane seemed the only solution for quick transportation.

After much demonstrating by various concerns, we bought a six-passenger cabin monoplane, capable of a cruising speed of 120 miles per hour. A pilot and mechanic were hired and we continued to use the ship for a period of fifteen months, flying some 750 hours. In February, 1931, along with other means of cutting expenses to the minimum, due to the so-called "depression," the pilot and mechanic were laid off and the airplane put in the hangar. In July of that year the airplane was sold, as it looked like business would not warrant using it again for some time; however, we were mistaken.

We were doing some extensive construction work in August, 1931, and the company officials were on the road a great deal; so it was decided to buy another airplane, this time a four-passenger cabin monoplane capable of cruising 100 miles per hour.

On September 3d of this year we completed three years of flying with this ship, and I can truly say that the business has profited by the use of it. We have flown it 1,250 hours, or approximately 125,000 miles in that length of time without trouble, accident, or the slightest injury to anyone.

Besides transporting company officials from place to place we have used the ship for patrolling and inspecting our pipe lines, especially after heavy rains when there is a possibility of washouts, etc. Anyone who has flown will know that a pipe line, no matter how many years it has been in the ground, can readily be seen from the air. Flying at an altitude of 500 feet, we can inspect several hundred miles of pipe in a day.

We have also used the airplane for surveying new routes where new pipe lines are to be laid. The easiest and best place to lay a new line can quickly be found from the air; whereas in a car it would take days of endless driving to get the same information.

We have, of course, kept an accurate account of all expenses on the ship, and after the first two years of service the average cost per mile was 12½ cents. This included depreciation, insurance, gas, oil, and pilot's salary.

At that time, out of curiosity, we figured up the actual number of man-hours that were saved by the use of the airplane. Our calculations were based on air miles and flying time for the airplane, and road miles and road time for a car traveling at an average speed of fifty miles per hour. We found if we had not had the airplane, one more executive would have been needed and also another high-powered car, saying nothing about the comfort, cleanliness, and relaxation of traveling by air.

As an example, I will relate a few of our trips. On a certain Tuesday, I took Mr. J. A. Bell to Seneca, Kansas, a distance of 110 miles. We were there approximately three hours, transacted some business, ate lunch and returned to Salina. Upon returning, a phone call came saying I was to be in Omaha early in the morning to meet Mr. E. R. Duree. I gassed up and flew to Omaha that evening. We left the next morning at 8 o'clock and returned to Salina, where Mr. Duree transacted some business, then went on to Dodge City in the afternoon. Leaving Dodge City the next morning at 10, we stopped at Garden City to contact some more officials. After lunch I received a phone call at the airport to meet a fellow at Great Bend, Kansas, and take him to Rochester, Minnesota, and that he had to be there by 9 o'clock the next morning. We arrived in Lincoln, Nebraska, at dark, where we stayed overnight, as we do not do any night flying. Leaving Lincoln at daylight and after a stop at Fort Dodge, Iowa, for gas, we arrived in Rochester at a quarter to nine. I left my passenger there as I had orders to return to Salina and Dodge City to get Mr. Duree again.

I hope that more private companies will realize the value of airplanes as we have. I feel sure that if they would try using one once, they would never be without one.

Everyone who is connected with our company is thoroughly sold on aviation and they always welcome a chance to go some place in the "company plane," as they call it. Quoting one of our men who says, "The most dangerous part of flying is driving to and returning from an airport."

LEONARD CONDIT.
Kansas Power & Light Co.

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$10.00 FOR THE BEST LETTER OF THE MONTH

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Only subscribers of Southwestern AVIATION are eligible to compete.

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Editorials and Comments

Municipal Ownership

AVIATION owes a lasting debt to many municipal governments throughout the land. With municipal funds facilities for airmen have been afforded, and in many cases, the cost of operation of municipal airports and landing fields far outweighs the revenue from remunerative services.

Yet in spite of this acknowledged condition, there exists in numerous instances a serious lack of co-ordination between those who utilize the facilities and those who direct all policy, improvements, maintenance and operations. The pathetic part of the whole situation is the widespread ignorance and apathetic viewpoint of city councilmen, mayors, alderman, etc., as regards anything aeronautical. Airport managers as a general rule are capable men but absolutely impotent to advise; for their superiors, shrouded in ignorance, are difficult to approach.

We are somewhat lost in a maze of demands to "do something" about getting municipal governing bodies interested in and informed about the needs at particular airports. Airmen's petitions fail, airport manager's suggestions are pigeon-holed; conditions on many municipally owned fields go from bad to worse, with no one but the airman giving a continental whether the runways are tearing up fuselages at every landing, whether visitors are properly looked after, whether the proper fuel is available, or whether airport "politics" are hindering the establishment to function as an airport.

Everyone, it seems, brightly anticipates a great wave of prosperity in the private flying branch of the aviation family, scheduled for 1935 and 1936. But unless municipalities become better informed of existing conditions on their own ports and work diligently and intelligently in bringing their facilities up to the modern standard of improvement to save the wise investment they have already made, there will be little incentive for aeronautical devleopment in any phase. Lack of funds, of course, is pardonable in the event the needs require finances and Federal agencies will not lend aid. But blatant ignorance and lack of foresight cannot be countenanced.

Without Designation

PERHAPS there is no group so universally disregarded at the present stage of aviation development than the Airplane and Engine licensed mechanics. The mechanic has just about earned the distinction as the forgotten man of aviation, and yet, ironical as it seems, our A. & E.'s are one of the most integral and important factors in the industry. For the most part the veteran mechanics have spent long years of apprenticeship. Their duties have always required complete knowledge and powers of keen observance, efficiency, and precision—qualities that come as a result of many years of study and the practical application of knowledge. They must be familiar with every type of plane and motor—not just the "best sellers". Their job is one that commands knowledge of detail and every airplane pilot or private owner of experience will witness the fact that seemingly insignificant items can quickly develop into serious situations that can be detected and checked by experience alone.

In short, the responsibilities of the A. & E. demand that he be a superior individual. He must keep informed on all innovations and developments in the new models. He must have a variety of knowledge in engines, woods, fabrics, metals, radio and electricity. Above all he must have to his credit many years of practical application of his knowledge before he is fully equipped to even so much as make a twenty hour motor check. Here, then, is where the discrepancy comes in.

There is absolutely no distinction between the A. & E. who has just received his license from the Department of Commerce and the A. & E. who has been repairing, inspecting and checking every part on a variety of planes for a period of years.

Our American pilots are classified as to their hours and experience in the air. Should not our mechanics have some designation, at least for the amount of service or number of years spent in their profession?

Testimony

RECOMMENDATIONS to the Federal Aviation Commission now holding public hearings in the Commerce Building at Washington promise to be varied and interesting. The most outstanding suggestions of the first few days of testimony came from representatives of the Bureau of Air Commerce and of the Independent Aviation Operators of the United States. Mr. Rex Martin, Mr. John S. Wynne, Mr. John H. Geisse appeared for the Bureau, and Mr. Louis R. Inwood represented the Independent Aviation Operators.

John S. Wynne, chief of the airport development section in charge of the emergency works airport program asked for the establishment of a Federal Aid airport program as permanent policy. He also sought legislation providing for control of obstacles in the immediate vicinity of air fields. Airway development and airmaking of the cities should be included in the airway development program, Wynne said, recommending as well an expansive airport construction program supported by annual appropriations for the purpose, beginning with $10,000,000 for 1935 and the same amount for 1936. "This is a Federal duty to the same extent as the construction of Federal Aid Highways is a Federal duty," Wynne said.

That the industry is financially unable to carry on the research necessary for the development of a reasonably priced, light, safe airplane and that Federal Aid in this program is a legitimate function was voiced by John H. Geisse, chief of the development section of the Bureau of Air Commerce.

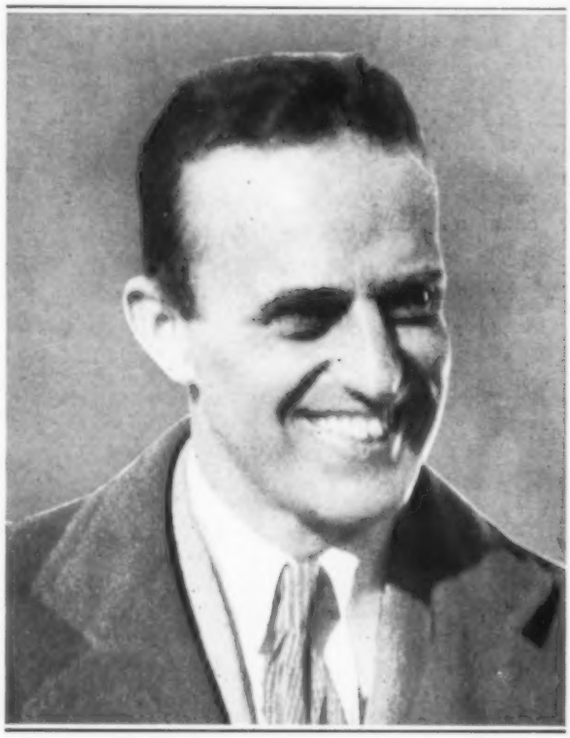
The creation of a new "special dispatch" airmail service, the establishment of more frequent airline schedules, the ultimate elimination of all airmail subsidies except our foreign air transport services, government development of transport airplanes and engines and a gradual co-ordination of air lines and

(Continued on Page 30)

Air Transports of Tomorrow

By Gerard F. Vultee

THE TRAVELING PUBLIC has been presented with ample evidence of the substantial developments which have been made and are now being accomplished in the field of air transportation. The past two years have seen average cruising speeds of commercial transport airplanes increased from approximately 110 miles per hour to the neighborhood of 160 or 170 miles per hour, or in some cases as high as 200 miles per hour. Coincident with this great increase in cruising speeds has come the practically universal use of all-metal aircraft. The elimination of vibration and the soundproofing of airplane cabins has immeasureably increased the passenger's comfort. From the standpoint of safety such devices as wing flaps, retractable landing gears and the use of controllable pitch propellers have improved the takeoff and climbing characteristics of the new high-speed transports and made it possible for them to land more slowly and in a smaller space than even the older, slower ships.



Gerard F. Vultee

While it is difficult at this time to predict accurately the probable developments of the next two or three years in the design and construction of transport airplanes, it is evident that certain definite requirements from the operator's standpoint necessitate corresponding developments in flying equipment and from the basis of supplying aircraft which will fit in with the future plans of operating companies it is possible to predict at least approximately the trend of air transport development in the near future.

It is evident at this time that three general classes of business are developing in the air transport field:

1. Passenger transportation over great distances at high speed. This class of business corresponds roughly to the present transcontinental lines but will be operated at much higher speeds and with less frequent stops.
2. Passenger transportation between neighboring centers of population.
3. Transportation of mail and express.

Considering the first of these classifications, the larger operators are looking toward the development of transcontinental services which will afford a far greater degree of speed and comfort than at the present time. In order to make possible shorter schedules one of first requirements is the elimination of frequent stops en route. It seems possible, for instance, that transcontinental service will be operated with but two intermediate stops. This will require the use of aircraft having a cruising range in excess of 1,000 miles. A further advance in speed of operation is possible by the use of airplanes which will cruise at altitudes of from 20,000 to 40,000 feet. This development requires a simultaneous development of more highly supercharged engines, engineering work on which is already well under way. Two stage supercharging allowing the possibility of shifting into position an additional supercharger as high altitudes are reached will allow the new engines to develop full cruising horsepower at the higher altitudes. For the comfort of the passengers it will be necessary to supercharge the cabins of such transports so that the pressure corresponds to an altitude of not more than 12,000 to 14,000 feet.

Adequate heating facilities will also have to be provided for the higher altitudes. Inasmuch as many of these longer schedules may be run at night these planes will have to be fitted to provide sleeping facilities.

One other feature which may be required in this high altitude flying is some type of entertainment for

the passengers. This entertainment feature will probably be necessary due to the fact that visibility of the ground will be difficult at high altitudes and such entertainment may take the form of moving pictures, facilities for playing cards or other games and provision of suitable reading material.

Inasmuch as the provision of these numerous features of equipment will entail the addition of considerable weight to such aircraft it is thought that the transportation of mail or express will be divorced from such pasenger operations and that such will be concerned entirely with the provision of rapid, long-distance transportation for passengers alone.

The transportation of passengers between neighboring or adjacent centers of population and the establishment of feeder services which will connect with the stopping points of the large transcontinental transports, will require smaller airplanes than those used for the transcontinental lines. These airplanes will probably vary in size from 8 or 10 passenger to possibly 25 passenger capacity. It is questionable whether these airplanes will require pressure cabins as the weight and complication of such an arrangement might overcome any possible advantage on the shorter hauls. It is quite clear, however, that such smaller transports will be required to have cruising speeds in the neighborhood of 200 miles per hour and will be equipped with many features for passenger comfort which are also used on the larger planes.

The third-class airplane, that which will be used for the long and short distance transportation of mail and express, will probably require the development of several types of equipment. These types may correspond very roughly to those used for passengers. For example, the long-distance mail or express transports will fly at high altitudes and must be capable of high speeds. They will require at least supercharged cockpits for the pilots or possibly the installation of oxygen equipment for the pilots' use. As in the passenger transports, air speed of service will be one of the major requirements and it is quite possible that services will operate across the country with only one intermediate stop for refueling. A number of other types of mail and express transportation will probably be used on intercity routes. These planes will probably be slower and of course have less range than those used on the longer hauls. It is quite possible, however, that they will be capable of carrying greater loads. Again it is questionable if such planes will require the use of supercharged cockpits or oxygen equipment.

The development of engines of higher horsepower, say in the neighborhood of 1,000 to 2,000 horsepower, carries with it the necessity for the development of larger propellers. Inasmuch as the speed of the tips of such larger propellers would exceed the speed of sound and in doing so would lose appreciably in efficiency, it will be necessary to resort to the use of reduction gears in all of the larger engines. This gearing will probably be so arranged as to allow the propellers to turn at one-third to one-fourth the speed of the engine and such gear ratio will reduce the tip speeds of the propellers to about 900 feet per second, the speed necessary for the reduction of propeller noise and the development of the maximum propeller efficiency.

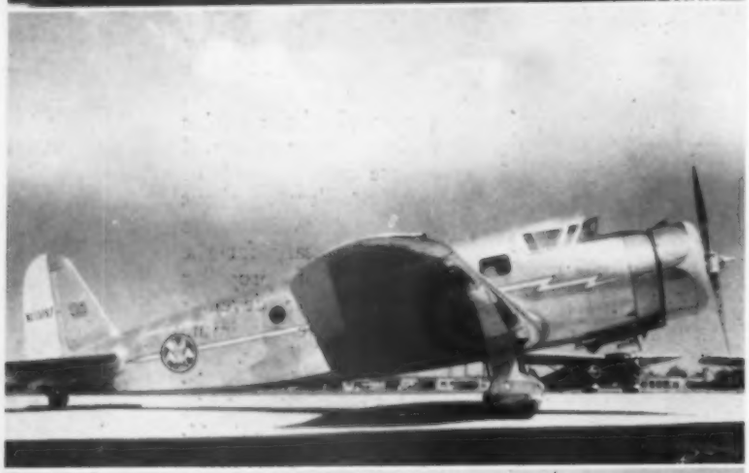
Engines of the air-cooled type will no doubt be replaced by the liquid-cooled type. Some measure of success may be looked for in steam-cooled engines, the British having made progress along this line in the past few years.

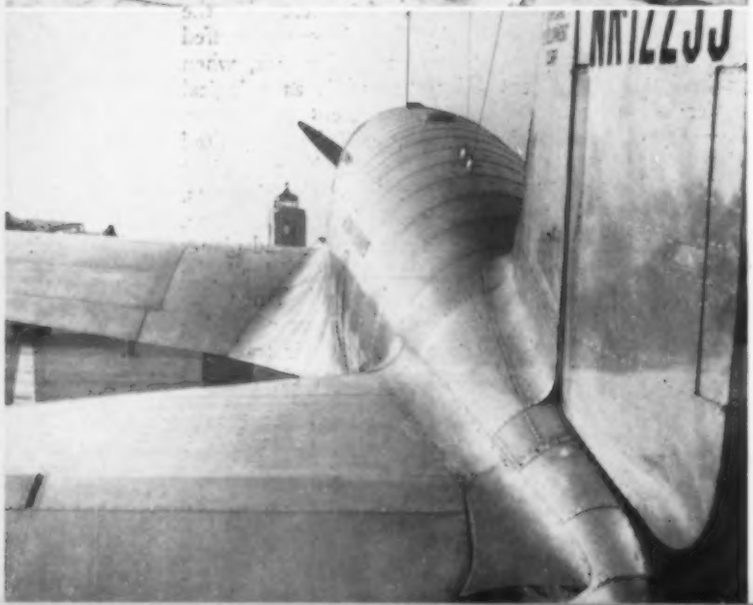
Summarizing the foregoing comments, it is evident that the future developments in transport aircraft will all trend toward the goal of supplying faster transportation, more comfort and more safety to the air traveling public and will furthermore render an increasingly rapid and economical medium of transportation for mail and express. Whether the far-seeing aeronautical engineer of today is considered by the layman as a Jules Verne, or a madcap inventor, scoffed at by all, he is working toward a goal which, when attained, will be accepted by the public as a logical matter of improvement over the present equipment. Human, mail and freight cargoes will be catapulted across the continent in the short span of six or eight hours despite the hazards of terrain or the elements. Non-stop transcontinental hops will be commonplace. Naturally, the development of these super-speed planes will be spread over several years' time; and all the while arduous experiments will perfect and change, discover and apply the principles and factors of design that will finally produce the commercial air transport of the future. It will be as safe and as comfortable as it is fast.

Gerard F. Vultee

Gerard F. Vultee is perhaps the youngest and one of the best known aeronautical designers and engineers in the United States today. He completed his engineering course in the California Institute of Technology in 1923. During the years 1925-1931 Vultee was associated with the Lockheed Aircraft Corporation in the capacity of engineer. At that time he designed many of the now famous Lockheeds. It will be remembered that his Sirius was equipped with the first retractable type landing gear to be put into production.

In January, 1932, Vultee became chief engineer of the Airplane Development Corporation. He immediately began the design and development of the original V-1 Transport, which was test flown in February, 1933. It is significant that the original V-1 did not require a single change from its first flight to the time it was purchased by American Airlines, with which company it has been in constant service since December, 1933. The V-1A Transport is Vultee's most recent contribution to commercial aviation.





The Southwest's

[For Complete Technical Description of the

SWIFTER SERVICE between the Great Lakes and the Southwest, inaugurated the 9th of September by American Airlines with its fleet of new Vultee V-1A transport planes, has resulted in international attention being drawn to this particular phase in the growth of our national air transport system.

Not since the establishment of American Airlines' Condor sleeper plane schedules five months ago between Dallas, Fort Worth and Los Angeles, via El Paso, has the Southwest been so signally honored with such marked improvement in air transportation facilities.

Today, Mexico is linked with the United States through several strategic cities, with mail, passenger and express services which serve materially to cement and improve international relationships. With the changes now being worked out by the airlines and the United States Post Office Department, Mexico will soon be within twenty-four hours of such cities as Chicago, Cleveland, Detroit, New York and Washington, thereby greatly enhancing international trade and travel.

Aeronautical development in the past few years has been directed not only toward greater speeds, but decided improvement in efficiency and comfort of the transport planes.

American Airlines has taken a revolutionizing forward step in establishing the swift Fort Worth, Dallas and Chicago services with the Vultee transports. A fleet of fifteen of these 235-mile-an-hour planes, the fastest commercial type craft in the world, is being completed at the Airplane Development Corporation factory in Glendale, California. Most of them will be utilized in the Southwestern-Great Lakes service. Others are also now in use between Chicago and Cincinnati on that portion of the American Airlines Chicago-Washington route. Delivery of the final ship will be made before the first of December, the factory reports

Particularly suited to the Midwestern service, the Vultee, aside from being exceptionally fast, is one of the most spacious, comfortable and best equipped planes of modern design to be placed in airline use. Great care and thought has been exercised in perfecting it for every phase of air transport operation.

The interior of the roomy cabin is trimmed with a soft shade of green broadcloth upholstery, above the window paneling. The cloth is both pleasing to the eyes and serves as a deadener to any sound which might seep in through the sound-proofed fuselage. The specially designed overstuffed chairs are trimmed with a darker shade of the same material. Each chair is adjustable to five positions of recline and affords ample comfort for the most exacting passenger. Unusual in the low-wing type metal plane, sufficient space is found between each seat to permit comfortable leg room. The cabin is adequate in height to allow ease in entering or leaving the ship. A complete lavatory is located at the rear of the cabin, a feature not usually incorporated in the construction of the earlier type high-speed craft.

Individual reading lights, ash receivers, adjustable foot rests and window curtains complete the list of many refinements found in the Vultee. One item worthy of mention is the exceptional visibility permitted by the arrangement of the windows. Although the Vultee is a low-wing transport, a wide angle of

New Service

V-1A See Southwestern Aviation for July, 1934]

visibility is possible from each of the individual windows placed beside the eight passenger seats.

Sound-proofing, long a problem to aircraft manufacturers, has been successfully accomplished in construction of the V-1A. Tracing the three principal kinds of noises found (1, mechanical vibration carried through the plane's structure; 2, air-borne noise carried into the cabin of the plane; 3, vibration of the various parts of the cabin itself), to their respective sources, acoustics engineers were able to eliminate the greatest percentage of noise in each classification, the result being that the cabin of the Vultee is quieter than a Pullman car, the low noise level obtained recording but 68 decibels (measurement of sound).

The cockpit of the Vultee is likewise sound-proofed, affording the pilot much greater ease and comfort in operating the controls.

The process of sound-proofing has been accomplished through the use of rubber mountings on the engine, sound-insulating materials installed in the cabin, indirect ventilation with noise filters in all ventilators and heater openings, and elimination of cabin vibration by proper construction and installation of parts.

The exterior of the Vultee is unlike that of most similar type planes, in that its elliptical fuselage is so perfectly streamlined and faired into the wings. Its surface of Alclad sheet is lapped smoothly and riveted, permitting only very slight "skin friction" which adds appreciably to its speed.

One of the outstanding features and advantages of the Vultee transport is its exceptional cargo carrying capacity. Weighing fully loaded four and one-quarter tons, nearly one-fourth of this gross is disposable load. Eight passengers total approximately 1,360 pounds, which permits an additional carrying capacity of almost 500 pounds in baggage, mail and express.

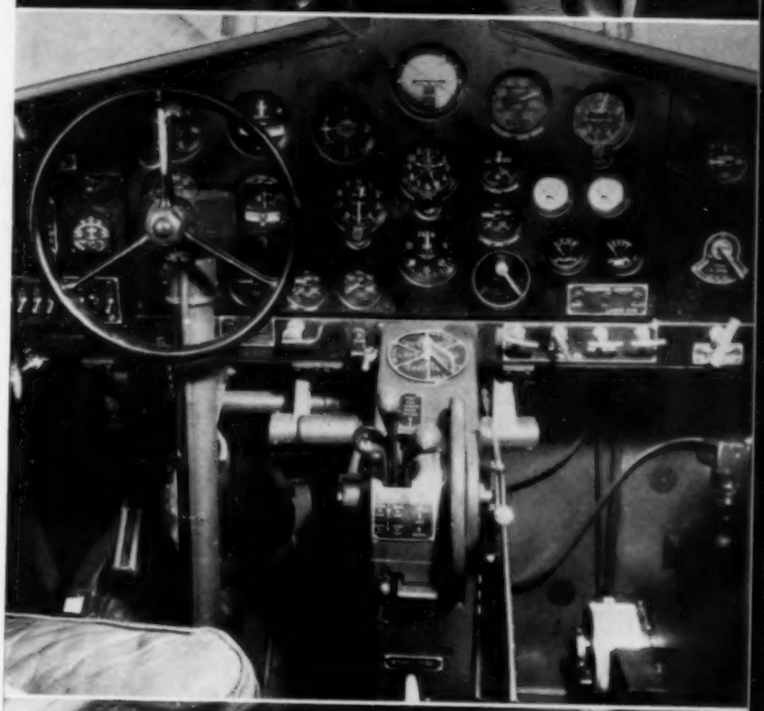
The Vultee is noteworthy for its high speed performance at an altitude of 10,000 feet when its Wright Cyclone engine develops its rated 735 horsepower, to propel it at 235 miles an hour top speed and 215 miles an hour cruising.

Considering the Vultee's speed and its unusual capacity and disposable load, it is notable that it has but a fifty-foot span with a thirty-seven-foot length over all. The cabin comprises 250 cubic feet by volume, with 90 cubic feet in addition allotted to baggage, mail and express. The plane has a cruising range of one thousand miles.

American Airlines, in placing the Vultee planes in daily service last month, now offers slightly over six-hour schedules between Fort Worth, Dallas and Chicago. Equally short times between the cities en route bring Oklahoma City, Tulsa, Springfield, Mo., and St. Louis within brief minutes of one another.

The inauguration of Midwestern and Southwestern service with the Vultee transports should result in greatly enhanced business relationships and industrial activities between these territories. American Airlines' new service will be watched with interest, as it establishes a new era, topping former records by setting the world's fastest pace for intercity communication.

Effective the first of October, American added a second daily north and southbound Vultee schedule between Fort Worth, Dallas and Chicago to care for the increased passenger traffic which was evidenced following the inauguration of the initial service September ninth.



Cerro Chino—Haven for Airmen

By W. S. Woolford

DOWN in the Big Bend country of the lower Rio Grande del Norte in Brewster County, Texas, is a great desert land, set down in a labyrinth of mountains, furrowed by deep chasms and narrow defiles, torn and twisted by cataclysms of Nature in the forgotten centuries of long ago. Here one finds America's veritable last frontier. Unpenetrated by highways or railways, the wilds of the Big Bend and the expansive acres of the famous Elmo Johnson ranch, Cerro Chino, bring home to man the impressive fact that Nature has pitted all her strength to wall out the curious and hardy travelers.

But aviation has made an advent into the Big Bend. The Elmo Johnsons have constructed an all-weather landing field on Cerro Chino, and to the airman, after piloting his plane over those tortuous one hundred and twenty miles from the last outpost of civilization on the railroad, the sprawling white strips of the big landing field spell "WELCOME" in capital letters.

If the airman has never set his plane down alongside the Rio Grande on Cerro Chino, visiting the great *adobe* ranch house of Mr. and Mrs. Elmo Johnson, he has of a certainty missed a glorious adventure and has a great treat in store on the day when he can experience that pleasure. The Johnsons have flung open the long closed door to the wild and almost limitless country in the southern part of Brewster County. Today the scenic wonders of the mountains, the splendors of the desert, of the Rio Grande and of Old Mexico are thrilling a rapidly growing list of travelers, the majority of whom are fliers.

The Johnson Ranch landing field is not old in point of years but it has a remarkable history. In the latter part of '29 there was much talk of revolution across the Rio Grande. The Johnsons, feeling none too secure in their isolation, wrote a letter to the Eighth Corps Area Office asking that an auxiliary landing field be constructed on the ranch as a means of protection in event of danger from across the river.

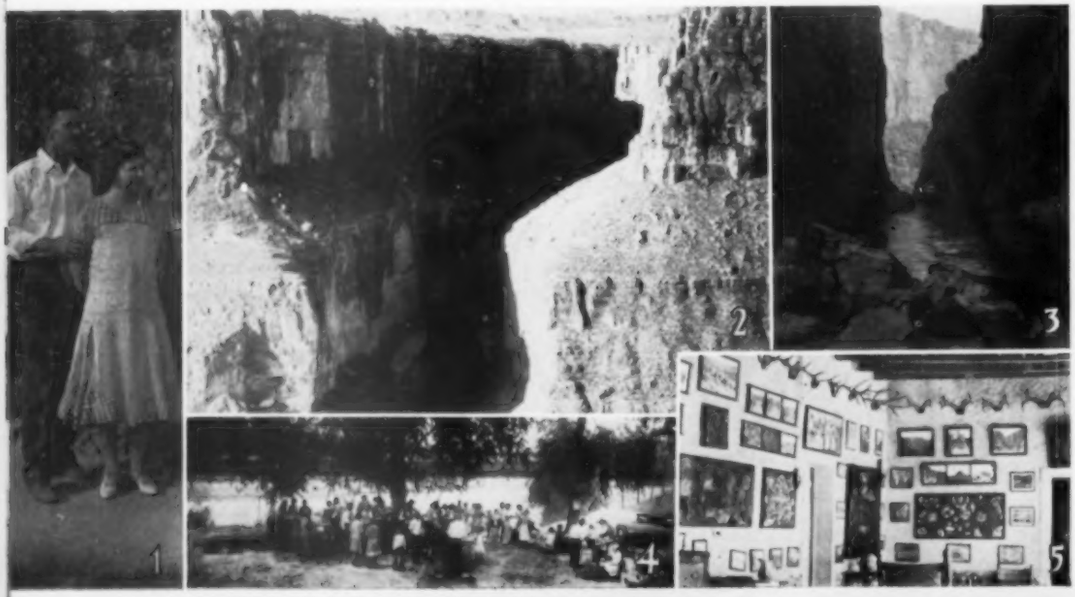
Captain Thad V. Foster, Airways Control Officer of the corps area, immediately dispatched a Sergeant and a truck from Dryden, Texas, to the Johnson ranch to prepare a place suitable for landings in advance of his flight. On July 6, 1929, Captain Foster took off from Dodd Field, San Antonio, flew to Dryden, where he refueled, and then headed his plane south towards the Rio Grande with several hundred miles of the most inaccessible country in the United States below him. Sighting the serpentine course of the river after several hours of flight, Captain Foster followed the river, crossing deep, narrow gorges, endless hills, over the cavernous depths of the Bouquillas Canyon with its 2,000 feet of sheer walls that impounded the surging waters below. Across the great canyon of the Mariscal thence over the Chisos Mountains, between which lofty range and the river the Johnsons' ranch spreads out over thousands of acres.

Below him, Foster could distinguish the initial construction of runways. The Sergeant dispatched from Dryden, Mr. Johnson and several Mexicans were at work clearing away creosote bushes and scraping the raw ground in preparation for the anticipated flight. When they saw the great blue and white ship of the Control Officer in the Chisos, they worked more furiously, for the strip was not yet long enough to permit a safe landing.

As the big plane roared overhead and dipped down to survey more closely the landing area, the Mexicans on the field and at the ranch stopped all work, searched the skies for the cause of the strange sound, and when the great bird soared overhead, men, women, children, chickens, goats and pigs made one mad dash for cover, vanishing away into huts or underbrush.

The clearing was 100 feet wide and 750 feet long. Foster came in for the landing and rolled into the brush at the far end of the strip. He climbed out with his mechanic and remarked, "That was fine work, boys. We got in, but if we ever get out we will have to make it larger." Mr. Johnson has been doing that ever since. At the present time the field has three landing strips, east-west, 4,200 feet; northwest-southeast, 3,000 feet; and northeast-southwest, 2,600 feet.

Although the field is in walking distance of the ranch house, all fliers are met in automobiles and



1. The Elmo Johnsons. 2. Mouth of the Santa Helena Canyon, snapped from the air (U. S. Army Photo). 3. Grand Canyon of the Mariscal, one of the many beauty spots in the Big Bend. 4. Picnics on the banks of the Rio Grande are frequent at Cerro Chino. 5. A corner of the quiet and cool patio—peaceful rendezvous for the travel-worn visitor.

The landing field at Cerro Chino has a remarkable history. It was originally undertaken by the Eighth Corps Area Control Office at the request of the Johnsons when revolution threatened across the river. From a narrow clearing of 750 feet in 1929, when Captain Thad Foster made the first landing, Cerro Chino's landing field has developed into one of the finest in Southwest Texas, well surfaced and of sufficient size to accommodate any plane. In the background may be seen the Chisos range of mountains.

transported to the house on the banks of the Rio Grande. In very few years, the place has become so well known that facilities have been constructed in order to accommodate visitors at reasonable rates. As a result, many fliers from Kelly, Brooks, Randolph and Dodd Fields in San Antonio and from Fort Crockett in Galveston spend many pleasant hours at Cerro Chino.

A favorite practice of the Galveston fliers is to bring iced fresh fish from the Gulf of Mexico. The San Antonians usually bring in the daily papers and city delicacies, although the Johnsons' irrigated garden furnishes as many delectable dishes the year 'round as any city markets afford.

From the first landing of Captain Foster on the little 750 feet of freshly cleared runway, many aerial visitors have called at Cerro Chino. To this, the well thumbed visitors' register will readily testify. Many civilian airmen are beginning to fly in for brief visits to this veritable Nature's wonderland, where they can step from its cool patio into the most isolated and pristine section of the United States, rich in rare desert vegetation, spectacular in beauty, teeming with legends of revolutionists of recent years and replete with the fascinating lore of an ancient basketmaking race that inhabited the region some 5,000 years ago.

From the word brought out of the Big Bend by the original travelers, many have visited the hidden country on and around Cerro Chino. Famous writers and painters, naturalists and archæologists have been among their number. Year by year the fame of the Big Bend spreads; the time is not far distant when the Johnson Ranch will be known far and wide. Bear hunters from as far away as the East and North are planning an expedition into Mexico, where wild game is plentiful, basing their operations at Cerro Chino. Better facilities for the airman are constantly being made available. Landing fields have been well placed at Presidio, Terlingua, Study Butte and San Vicente. Terlingua is famous as a quicksilver mining center; San Vicente as the home of "Uncle Tom" Miller, the Bend's most colorful character.

Two years ago, disastrous flood waters swept down the Rio Grande. Colonel Ira Longenecker, Corps Area Air Officer, and Captain Foster were in the Big Bend country. They flew down the river ahead of the flood tide, dropping notes in Spanish and English, warning the inhabitants on both sides of the river to flee. Scores of lives were saved by this warning from the air. The widely scattered populace along the Rio Grande have not forgotten Longenecker and Foster and their memorable flight. On another occasion a commercial ambulance plane landed at Terlingua, transported an emergency operation case to San Antonio and saved the patient's life.

The advent of the arts of the air to the Big Bend country has produced its share of humor. The Mexican inhabitants, far outnumbering the Americans, for the most part not only had never seen an airplane, but had never seen a locomotive and very few an automobile. A venerable Mexican was once enticed to ride in one of the visiting planes at Cerro Chino. After a short hop, he returned to the ground a god among the groundlings. His peon brethren looked upon him as some superhuman being since his jaunt into the clouds.

On another occasion, a double murder was committed in the lower reaches of the Big Bend. The bodies of the murdered men could not be found. Mr. Johnson and the local peace officers were formulating plans to trap the criminals immediately after the murders when Captain Foster dropped in on his regular monthly visit. Accompanied by an officer, Captain Foster flew about the adjacent country in an attempt to spot the criminals' hideout. Flying low over an abandoned goatherders' corral, they noticed marks of habitation, and in the corral freshly turned earth. Landing the plane, they mounted their horses and the party crossed the river to discover the bodies of the murdered men buried in the goatherder's corral. The peons in the territory were thoroughly convinced of the airplane's extraordinary power. They believed that Mr. Johnson had merely pushed a button, bringing the plane from over the mountains, and from the vantage point up in the sky the occupants had looked into the earth to find the hidden bodies. There was a period of peace and quiet along the river for many months.

Even today Captain Foster visits Cerro Chino regularly. Each month he makes an inspection of the landing fields in his expansive territory that takes him as far west as Tucson. At Cerro Chino, the cots are taken from under the covered patio, for in good weather the visitors sleep under the stars.

Although it is the most isolated ranch in the United States, the feeling of isolation vanishes from the guest, for upon arrival of visitors the patio is ever the scene of gaiety. Mrs. Johnson, a regional vice president of

(Continued on page 32)

Cinema-Aeronaut

By L. J. Fisher

THE Public Address Service Company of Dallas, Texas, has complete charge of talking picture equipment in one hundred and twenty sound-equipped theaters in Arkansas, Oklahoma and Texas. R. Z. Glass is at the head of the firm but the real "executive," says Glass, is his new Lambert Monocoupe, which has been placed in constant service in maintaining close contact with the six score theaters scattered over a wide territory and in commuting between Dallas and Beaumont, Texas, in which cities Glass owns and operates his several popular theaters.

A "hurry up" trouble call from any of the one hundred and twenty clients brings the Monocoupe and a service engineer into immediate action to "get the show going again.' With the Monocoupe as the transportation element, the combination never fails. The plane is used as well in carrying film from Dallas for showing in his Beaumont Rio Theater—and on one occasion Glass came to the rescue of a competitive theater owner, whose film had failed to arrive in the ordinary dispatch of the express business. Flying the Monocoupe to Beaumont well laden with the already advertised cinema, Glass arrived in time to deliver to his competitor the film that permitted the show to go on.

Most "airplane-in-business" stories usually begin, "He was a World War flier.' But here we find the case of the modern business man who bought his first plane less than a year ago, learned to fly, received his fifty-hour private pilot's license within thirty days time, who now has to his credit more than four hundred hours of solo time and owns his second airplane. In addition to his weekly flights from Dallas to Beaumont, Glass has an unusual array of cross-country trips on the record. Business flights to New York, Washington, El Paso, Chicago and St. Louis are included in his log.

Perhaps the most interesting use of his plane in the motion picture phase is in building up attendance figures for Saturday's matinees. All through the South, the Saturday matinee in the majority of theaters is devoted entirely to the kids. At Beaumont's Rio Theater, the progressive owner has instituted a "grand prize" of a free ride in the Monocoupe. As a result the matinee is packed to the walls every Saturday and one youthful member of the audience receives the thrill of his tender years on what is usually his first trip into the air.

Glass maintains his flying schedules in good weather and bad. The trim new Monocoupe, which was delivered at the factory in St. Louis last July, is completely equipped with blind flying instruments and radio. Glass maintains that there exists no more economical mode of transportation than the airplane affords, estimating that his total cost for his Monocoupe is 2¼ cents per mile, a startlingly low figure of operation that includes gasoline, oil, motor checks and hangar. Maintenance costs are low, he explains, when the work is done regularly and by competent mechanics.

"I believe that flying is an art that combines business with pleasure—a hobby as well as an invaluable asset to one's business or profession. I get a genuine kick out of every flight. The realization that I am averaging approximately twenty-five miles to the gallon of fuel at a cruising speed in the neighborhood of one hundred and twenty miles per hour—and airline miles at that—adds substantially to my enjoyment," Glass said.

From the domestic angle, the Monocoupe has hangared and actually superseded the family automobile when it comes to cross-country trips; Glass' wife and child fly with him on occasional vacation trips, affording sights and experiences unknown to groundlings. His weekly visits to Beaumont are anticipated with a great deal of pleasure by the Wing Over Club, licensed pilots' organization, for when he has time Glass participates in the aerial fun of the club. He has become an inveterate pilot since last October and the casual observer would never suspect that it was in the brief space of a year that he learned the ins and outs of the greatest game in the world.

R. Z. Glass received his private pilot license after thirty days of instruction. He has owned two airplanes and amassed four hundred hours flying time in less than a year. His present plane is one of the new Lambert Monocoupes, which takes him on business and pleasure trips over the nation's airways. In the opinion of Glass, the private utility plane is rapidly becoming an indespensable factor in the average business, particularly for executives and professional men.

SOVFOTO

The "Maxim Gorky"—the World's Largest Land Plane—Unique Giant of the Air.

The World's Greatest Land Plane

IT HAS BEEN DONE. The construction of a huge land plane surpassing in dimensions and accomplishments all previous undertakings of this character has recently been completed in Russia. It is known by the name *Maxim Gorky,* after one of Russia's more prolific writers. It was built with funds obtained by voluntary popular subscription at a cost of 6,000,000 rubles. One ruble today is worth 88 cents American exchange. Its almost prohibitive cost is readily seen. Most remarkable of all, the colossus actually flies well, and more remarkable, it has established records in combined speed-altitude-weight tests. While we are concerned chiefly with the physical aspects of this super-aeronaut, we might mention in passing that it was built for cultural and educational purposes—in order to bring closer together the far-flung provinces of the U. S. S. R. Special hangars for the plane will be constructed in population centers throughout the Nation. Its physical aspects and accomplishments are significant to us from the standpoint of the possibilities of wholesale transcontinental air passage and wholesale transportation of air express—we might even say air *freight.*

Months of engineering research and wind tunnel experiments were required in perfecting the design. The world known plane designer Tupolov is credited with the final draft of specifications. The completed plane represents the combined aeronautical resources of a whole Nation, encompassing some thirty-five plants and 120 separate companies to produce the parts, and calling upon the combined experience gained by the entire personnel of TSAGI, Russia's aeronautical institute. Its successful maiden flight was made over Moscow on June 19, 1934, to greet the survivors of an Arctic nautical disaster. It was again on display August 18, 1934, U. S. S. R.'s National Aviation Day. Since that time it has broken three world's records. In a series of tests recently completed it lifted a 13.5-ton load to a height of 4,790 meters (approximately 15,000 feet) and remained in the air one hour and forty-eight minutes, breaking the world's record on tonnage and height and duration of flying with such tonnage. A. Fokker, world famous designer, termed the plane a phenomenon.

The *Maxim Gorky* (spelled *Gorki* in the Russian press) is an all-metal monoplane with eight motors, developing 7,000 horsepower and weighing 86,000 pounds (43 tons) and capable of a speed of 150 miles per hour, over a cruising range of 1,250 miles, making nonstop flights of half this distance on an average. The wing span is approximately 210 feet, with length of fuselage of 115 feet. It is more than 26 feet in height, the thickness of each wing being over six feet. The two sets of double wheels beneath the plane are over six feet in diameter and the distance between the wheels is over 40 feet. The plane carries a crew of 23 men and has capacity for 40 passengers in addition to its fully equipped printing press capable of producing 8,000 double sided leaflets per hour as well as complete photographic equipment with facilities for development of films a few hours after taken. It carries complete radio and electrical apparatus for aerial navigation as well as broadcasting—its tremendous loud speaker being known as the Voice from the Sky. The plane has an automatic telephone switchboard with 16 lines, in addition to complete facilities for holding

(Continued on page 32)

WASHINGTON

P. T. NORTON, JR.

The First Official Aircraft Accident Report of the Bureau of Air Commerce

AVIATION HISTORY has been made. An important forward step in the advancement of aeronautics has been taken. It is a bold step. It is a necessary one. Authority to take it was granted to the Secretary of Commerce in the closing days of the Seventy-third Congress by an amendment to the Air Commerce Act of 1926. The Director of Air Commerce has submitted his first official report to the Secretary of Commerce on a major aircraft accident. It does not mince words. The cold facts are presented in black and white.

Public safety, the protection of "John Citizen," is the Government's first concern. If the Secretary of Commerce deems it in the public interest to let the facts be known, the report is made and that is that. The mystery and shush-shush heretofore prevailing is now a thing of the past. In the cold glare of an official report the facts are made known. At first blush, it may seem hard for a private aeronautical company to have to take it on the chin so bluntly. Granted that the accident was anything but intentional. Yet the Bureau of Air Commerce has drawn up regulations for scheduled flights deemed to be in the interest of public safety. These regulations mean business. There is a certain but limited number of the causes of aircraft accidents. The regulations were drawn up in the hope of forcing these causes to the irreducible minimum. If the regulations are disregarded, the consequences must be taken with a "grin and bear it" attitude on the part of the operators. The regulations were promulgated to be obeyed. The cold official reports will put a premium on obeying them in order to absolve the unfortunate operator suffering a major accident from any semblance of negligence, willful or inadvertent. It is financially and physically impossible for the Bureau of Air Commerce to have enough inspectors to determine under every circumstance whether the regulations are being carried out. It is true that in order for its official reports not to prove a boomerang, the Department must have furnished every inspection service reasonably expected of it by prudent men. But in the final analysis, the burden of complying with the safety regulations of the Air Commerce Bureau must fall fully on the shoulders and conscience of the operators themselves. In the interest of all civil aeronautical activity, safety should be the watchword. It is beyond denial that passenger travel by air will be brought to its fullest realization only when the public at large is convinced that air travel is as safe or safer than any other means of rapid transportation. It is true that to comply with all the safety regulations may prove very expensive to the operators, but until that reputation for inherent safety is gained with the general traveling public, this seemingly expensive compliance will prove a most intelligent investment in good will and future profits.

And now for a brief analysis of the three causes given for the first officially reported major aircraft accident.

Cause No. 1: "Dangerous and unusual weather conditions encountered." Of course, every manifestation of weather is an Act of God, and no human being can do anything to change it. Human beings can only use their scientific and meteorological skill in attempting to make the most intelligent guess possible as to whether it would be safe to buck the weather when a critical decision must be made. For our purposes, then, to say that bad weather caused an accident is well-nigh futile unless all other factors have been eliminated, and the weather was such as to be unforeseeable in the light of our present scientific knowledge—so that the weather actually causing the accident would fall in the technical classification of an Act of God, thereby relieving all affected parties of responsibility.

Cause No. 2: "That the pilot committed an error of judgment in taking off in the face of dangerous and threatening weather, about which he did not have sufficient information."

Now, no one expects even the most skillful pilot to have infallible judgment. And at best, in the majority of cases, the decision made may not be the pilot's best personal judgment in the matter. He may be sincerely trying to select the lesser of two evils: 1. Shall I take my scheduled plane through on time? or 2. Shall I play safe? His final decision may, then, be based largely on the policy of the company by whom he is employed. Therefore, in those cases where it is necessary under the circumstances that the decision be made by the pilot himself, it is far in the interest of public safety that the policy of the operating company should be safety first rather than that the plane must go through on time!

Cause No. 3: "That the ground control of operations was inadequate to meet the emergency created by this unusual weather."

This conclusion gives us the greatest concern. It is the one about which most can be done in the future.

Unusual weather should be anticipated in the operation of a scheduled air line especially if the flights are scheduled or the possibility is contemplated that they might have to be made after nightfall when mechanical facilities are to a large extent relied upon. That is to say that unusual weather should be contemplated under such circumstances in determining what ground control of operations is adequate rather than treating unusual weather as an emergency. In determining this adequacy, allowance must be made for the tendency of all operators to reduce expenses insofar as reasonably possible. Therefore in drafting regulations the governing body should make ample margins to secure such adequacy. After the official regulations are then promulgated, the duty of strict compliance falls primarily on the operators and the secondary duty of enforcing compliance falls on the governing body, the Air Commerce Bureau. The duty of enforcing compliance with regulations being secondary, due cognizance must be given to the physical and financial limitations of the governing body.

To sum up: 1. These Official Departmental Accident Reports are privileged material. No cause of action at law arises with their publication. In view of this privilege, the Government will be particularly careful in announcing its judicial conclusion based on the facts found in the official investigation.

2. These Reports will serve to increase public confidence in air travel. The element of mystery is removed.

3. Out of the group of known causes of aircraft accidents the particular causation factors of the specific accident under observation will be selected and determined, based on the sum total of all the facts as found.

4. The reports will increase obedience to all regulations promulgated in the interest of safety. Those disregarding the regulations must take the consequences. The duty of determining the reasonableness of the regulations falls on the Government.

The D. O. C. Inspectors' Planes:

The Bidding

CONTRARY to the currently prevailing popular impression, the officials of the Bureau of Air Commerce were generally pleased with the bids submitted on the idealistic inspectors' planes, rather should we say, the *tenor* of the bids submitted. For well we know that any purchaser hopes to pay as little as necessary for what he buys.

The belief is that a valuable contribution has been made to aeronautical development as a result of the bidding. The plane is of radically new design as we picture it from the specifications, and the submission of bids was made only after extensive work by highly trained aeronautical engineers in attempting to perfect the coveted new idealistic design at the least possible price. Calling for actual bids on these planes desired took them at once out of the realm of research and fancy—and put them squarely in the business world of reality. We term the planes idealistic because they are an approach to the coveted popular priced airplane long envisioned.

We would be remiss if we did not correct the impression that Director Vidal was disappointed in the figures submitted in the bids. As a matter of fact he was very much pleased with the sound work done, the designs and specifications submitted, and, on a whole, the tenor of the prices asked. It must be remembered that in building only twenty-five planes of a radically new design, the development cost of this particular twenty-five must be included in the price asked for the twenty-five finished products. It stands to reason, then, that the development cost being absorbed in the first twenty-five planes produced, the price of future planes would no longer include development expense, and with the added advantages of volume production, that price would rapidly approach the desired goal of $750 per unit. This might take a little time, but we are definitely headed on a sound basis in the right direction.

Complete coverage on the details of the bids submitted carried in *Southwestern* AVIATION's September issue disclosed that there were eleven *prima facie* valid bids, ranging from $2,493.87 per unit to the high of $6,670.00 each. Somewhere in this range of *prima facie* valid bids we hazard the prediction the final award will be made. All bids are still under consideration by the Department. The interesting models and specifications submitted are being thoroughly examined. No official announcement of award has yet been made. Solely on our own, we predict that if Mr. Waterman's design is accepted, the award will be his on the basis of his low bid of $2,493.87. If his design is unsatisfactory, that is to say, if deemed incompatible with the specifications on which competitive bids were to be based, then it is predicted that Curtiss-Wright Airplane Company of Robertson, Missouri, will get the coveted business on the basis of its crack design and second *prima facie* low bid of $2,995.00 per unit.

Radio Facsimile Transmitter Tested

RADIO TRANSMISSION of the facsimile of a typed or handwritten message may be a future method of disseminating weather information on the Federal Airways System, if experiments now under way by the Department of Commerce prove successful. A system of radio facsimile transmission has been given a preliminary test by the Bureau of Air Commerce, Director of Air Commerce Eugene L. Vidal announced recently with favorable results.

The Bureau also has under consideration other methods of transmitting radio messages in such a way that they can be received in recorded form, but will not make any change in the present communications system of teletype machines operated over land wires until all of these investigations have been completed, Mr. Vidal said.

Facsimile transmission, as tested by the Bureau, is based on the scanning beam principle. In the tests conducted here messages were transmitted from Washington, D. C., airways radio station at Silver Hill, Maryland, to the Department of Commerce Building in Washington, D. C.

Rex Martin, Assistant Director of Air Commerce in charge of air navigation, who arranged for these experiments, said that both the transmitting and receiving machines were compact, and could be set up for operation by plugging them in, respectively, in a transmitting set in place of the microphone and in the

(Continued on page 32)

Nineteen Thousand Miles by Air

To Buenos Aires aboard the Brazilian Clipper——across the Towering Andes to Santiago, thence up the west coast of South America by Pan American-Grace Airways, across the Central American Republics into Mexico——two eminent newspapermen describe their

Impressions of the Flight

AMON G. CARTER, Publisher, Fort Worth Star-Telegram
EDGAR M. SWASEY, Vice President, Hearst American Weekly

IT WAS exactly 7:57 a. m. on August 16 at International Airport, Miami, Florida. The largest air transport ever developed in America, the giant flying boat, Brazilian Clipper, hoisted anchor, sped momentarily across the azure sea and took to the air with its cargo of American newspapermen, government officials and executives of Pan American Airways, over whose system the thirty-two passenger magnificient transports will soon go into regular service. The departure marked a new chapter in aeronautical history, a new era in international good will.

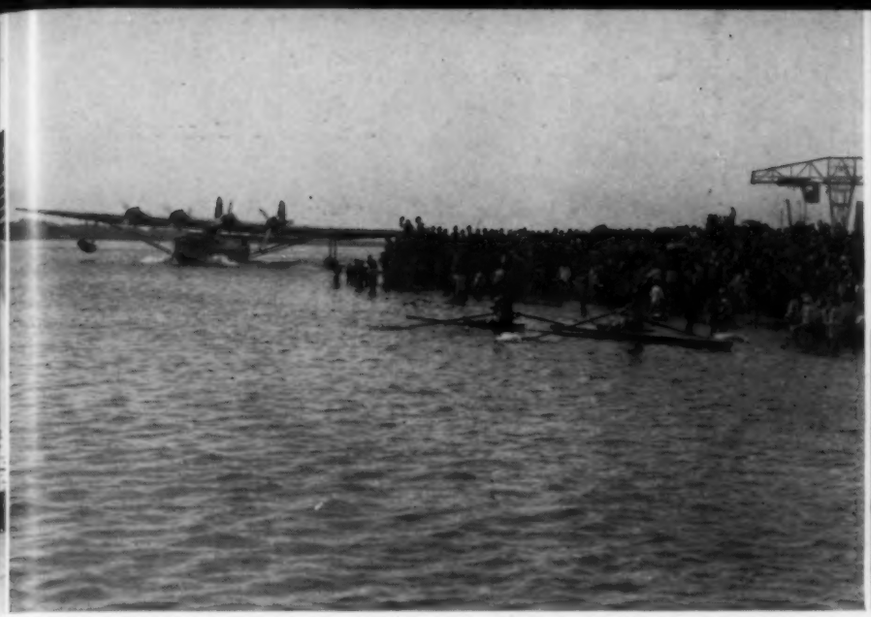
The outgoing trip from Miami to Buenos Aires, a distance of 7,400 miles, was completed in but 55 hours and 22 minutes of actual flying time. It was not an abnormal or "stunt trip", but the first of regular schedules of the same travel time over the route. The service moves the great South American markets two days closer than the best previous air transportation time. After leaving Miami, stops were made at Port au Prince, Haiti; San Juan, Porto Rico; Port of Spain, Trinidad; Georgetown, British Guiana; Paramaribo, Dutch Guiana; Para, Sao Luis, Natal, Bahia, Caba Frio, Rio de Janeiro and Puerto Alegre, Brazil; Montivideo, Uraguay and Buenos Aires, Argentina. Two pleasant days were spent in Rio and two in Buenos Aires. The other stops were overnight.

Desiring the experience of the flight across the Andes and the voyage up the west coast of South America into Central America and Mexico, we did not return with the record breaking Brazilian Clipper. Our return voyage over the Pan American-Grace system embraced two-day stops in Santiago, Chile; Colon, Panama and Mexico, D. F., with overnight visits to Antafogasta, Chile; Lima, Peru; Guayaquil, Ecuador; Tomaco, Colombia and San Salvador. From Montevideo to Panama the route was over the jointly operated Pan American and Pan American-Grace lines and from Panama to Mexico, D. F., over the Pan American system over Costa Rica, Houduras, San Salvador, Guatemala to Mexico City and Brownsville. Only four and one-half hours were required to make the voyage from the Mexican capital to the border city. From Brownsville to Fort Worth the flight of 551 miles required but two hours and 56 minutes in the new Vultee Transport of American Airlines.

Not one accident or even the slightest mishap occured on the entire voyage. There was but one instance of delay or alteration in plans over the entire 18,000 miles of flight. We were nearing Rio, where a crowd of 20,000 spectators awaited the Clipper's visit. Dense fog made it inadvisable to land and the pilot returned ninety miles up the coast to take the ship into a protected bay. A delightful dinner was served on board, the guests of Pan American Airways amusing themselves during the evening at bridge and other games. The flight to Rio was completed the following morning, the christening ceremonies of the Brazilian Clipper taking place in due time by the wife of the President of Brazil.

At every stop along the route enthusiastic welcoming parties greeted the good-will tour. In the larger cities where extended visits were scheduled, we were honored with elaborate receptions and afforded many enjoyable entertainments. At Haiti, Puerto Rico and Georgetown the governors of the respective provinces presided at the receptions. In Brazil, Argentina, Chile and San Salvador, the presidents of those republics with other dignitaries honored their North American visitors in traditional Latin-American fashion.

During the entire circumnavigation of the great continent, it was evident that the international air service is doing and



Left to Right:

1. Aboard the giant Pan American Airways Brazilian Clipper when it left Miami August 16 for a 15,000-mile good-will tour of South American countries were, left to right: (Sitting) William F. Brooks, executive assistant to the General Manager, Associated Press; James H. Furay, vice president, United Press; Frank E. Gannett, chairman, Gannett Newspapers, publisher, Rochester Democrat & Chronicle, Rochester Times-Union and associated papers; Jerome D. Barnum, publisher, the Syracuse Post-Standard, vice president, American Newspaper Publishers Association; J. N. Wheeler, general manager, North American Newspaper Alliance; Eugene Vidal, director of air commerce, U. S. Department of Commerce; James G. Stahlman, publisher, Nashville Banner Incorporated, president, Southern Newspaper Publishers Association, and John Steele, service engineer, Pan American Airways System. (Standing) Roy Howard, chairman Scripps-Howard Newspapers; John Cowles, publisher, Des Moines Register and Tribune, and associated papers; Paul Patterson, publisher Baltimore Sun; Edward G. Tomlinson, radio commentator, National Broadcasting Company; G. L. Rihl, vice president, Pan American Airways System; N. V. Jenkins, publisher, the Savannah Morning News and the Savannah Press; Edgar M. Swasey, vice president, Hearst American Weekly; Juan T. Trippe, president, Pan American Airways System; Amon G. Carter, publisher, Fort Worth Star-Telegram; E. E. Young, vice president, Pan American Airways System; M. C. Meigs, manager Chicago American (Hearst); extreme right standing is Robert G. Thach, vice president and general counsel of Pan American Airways, who arranged the trip.

2. The wife of the President of Brazil, Senhora Setielio Vargas, christening the S-42 "Brazilian Clipper."

3. Arrival at Porto Alegre, Brazil.

4. Arrival at International Airport, Miami, August 30, following its remarkable 7,400-mile return trip from Buenos Aires in five days. The big flying boat flew 1,900 miles from Trinidad to Miami the last day of its maiden voyage to South America.

will continue to do an even greater work in fostering better international relations and in promoting commerce and trade between North and South America, even though Pan American and Pan American-Grace experience stiff competition from the European air lines. Air France, for example, operates from Santiago, Chile across the continent and up the east coast to Natal, thence across the Atlantic to Europe by way of Africa. France, England and Germany are lending every encouragement to aviation development—definitely more so than the United States. The foreign countries afford their lines a competitive advantage over our great international system. The foreign lines are given a substantial government subsidy and in addition are permitted to retain all revenues. The United States competitor, while given a subsidy, turns back to the Government practically one-half of the subsidy and suffers additional penalization by reason of the foreign exchange. Aviation is doing more than any one factor or industry to open trade avenues between the two continents as well as to foster better political relationships. American aviation has made splendid progress, but if it is to meet the constantly improving competition from the Europeans, it will be necessary to match foreign governments' support of their respective air services.

Perhaps the most impressive observations of the momentous flight were the vastness of the republics and their resources, the evidence of their improving economic conditions, the progressiveness of their cities and peoples as well as the admirable work being done by Pan American in cementing the relationships between the republics and the United States. It is difficult to conceive the vastness of many South American countries, particularly countries like Brazil, Argentina and Chile. The great ranches were impressive sights with their huge ranch houses and hundreds upon thousands of cattle. The same impression of vastness characterized the flight over the Brazilian coffee plantations.

The people throughout the continent are the most polite and cordial to be found anywhere. They are predominatly alert and progressive. There are no more beautiful or modern cities than Rio, Buenos Aires, Lima, and Mexico City. The hotels are magnificent structures, completely modern, and the cuisine cannot be equalled.

There are clubs that would compare with any in the world. For instance the Union Club at Santiago covers practically an entire city block. Its bar is one hundred feet long, and between the hours of five and seven in the afternoon it is the gathering place for the business men of the city. We counted eighty-five at the bar at one time and two hundred seated around the tables. We were informed that this was an everyday occurence. There was no evidence of intoxication anywhere.

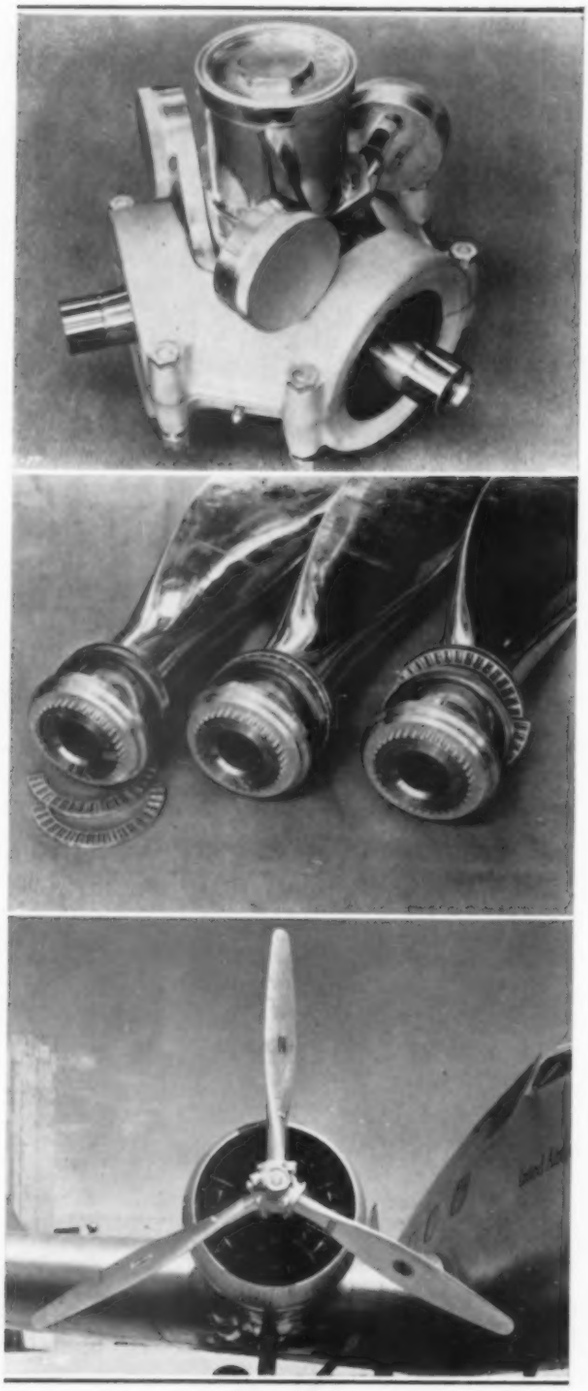
The race tracks at Rio, Buenos Aires and Santiago are the finest in the world. Races are held every holiday and Sunday throughout the year. It was interesting to note that the stores close on Saturday at noon, and although the law permits racing on Sundays, it prohibits the sale of anything on Saturday afternoons.

Other customs and modes of living are also quite different from our own. Stores do not open until 9 a. m., the executive usually arrives at his office about 10; the stores close at noon and reopen at 2, remaining open until 7. Dinner is usually served around 9 o'clock, sometimes as late at 10:30. No one seems to be in a hurry, everyone apparently getting a great deal out of life; yet everywhere is ample evidence of activity and advancement. Their polite

(Continued on Page 32)

Aircraft Accessories

Controllable Pitch Propellers



Above: The complete hub assembly of the Hamilton controllable pitch propeller, showing the slot on the back side of the counterweight and the method of attachment to the cylinder. The cylinder is seen in the center of the hub with the hex nut above. Protruding from the hub are the spindles of the spider around which the blades rotate.

Center: The Hamilton propeller blade ends with the blade bearings. The bushing which carries the half circles for the four index pins keying the counterweight assembly to the propeller blade is visible as well as the pins and screws locking the bushing in place.

Lower: The complete Hamilton propeller installed on a Wasp engine of a Boeing 247.

By Reagan C. Stunkel

THE perfection and application of the controllable pitch propeller remains as one of the outstanding achievements in modern aviation. The practicability and dependability of the mechanism has been definitely demonstrated by recent marked improvement of the performance of the new transport planes, which can be attributed largely to the universal adoption of the controllable propeller as standard equipment.

Predominant among the reasons for lost efficiency in performance of airplanes has been the limitation of the fixed pitch propeller which requires a design and adjustment limiting the engine to its rated speed at full trottle in level flight. This feature, while preventing the consequental abuse of overspeeding the engine in flight, limits the power available for the take-off to approximately 80% of the normal engine output.

By using the controllable propeller, the pitch may be adjusted to hold the engine at the rated speed and horsepower output when taking off and climbing, and may be re-adjusted in flight to secure maximum efficiency for speed and cruising.

At high altitudes, variations in air density allow the fixed pitch propeller to turn about 40% faster than the rated r. p. m. on the ground. If this propeller is adjusted for the best cruising at altitude, improper operation on the ground will result. There will be a loss of engine power available which must be added to the usual loss in power between the maximum speed of the plane and the conditions of take-off and climb. The obvious value of the controllable propeller under this condition is the ability to select the efficient pitch settings for the flight, one for the take-off and climb, and one for the high altitude cruising condition.

The result of a high pitch angle to secure a high cruising speed for the airplane results in a very inefficient take-off characteristic due to the power losses described before. Elimination of this loss is one of the prime factors in favor of the controllable propeller.

Two distinctive and entirely different types of controllable propellers have been developed, one by the Hamilton Standard Propeller Company, and the other by the Lycoming-Smith interests. It is interesting to note that while the methods of operation of these propellers are entirely different, both have met with gratifying success in operation. These manufacturers have concentrated efforts toward building controllable propellers of a simple, compact and rugged construction, combining a higher factor of safety than the corresponding fixed-pitch propeller they are designed to replace.

Hamilton Standard

THE Hamilton Standard controllable propeller represents the result of years' intensive development in the hydraulic principle of operation. The operation of the propeller depends upon the oil pressure developed by the engine pump to move the blades into the low pitch position, and the centrifugal force developed by counterweights attached directly to the blade ends to change the pitch to the high position. Adjustments within the counterweights permit the blade angles to be adjusted in the low pitch position providing full horsepower for take-off and climb and in the high pitch position, obtain the best cruising or high speed performance.

An oil pressure line from the main pressure supply in the engine is conducted to a three-way valve and thence through the collector ring into the interior of the front end of the crankshaft and out through the crankshaft into the pitch-operating cylinder. The three-way valve is so arranged that the rotation of the valve stem will cause the oil line leading to the propeller to be connected with the pressure supply in one position and to drain directly into the crankcase in the other position. When the valve is rotated into the pressure supply position, the oil flows through the collector out into the crankshaft and forces the pitch-changing cylinder to move forward.

When this cylinder moves forward, the counterweights are actuated in toward the axis of the crankshaft by a ball bearing arrangement attached to the cylinder, moving in a slot on the inside face of the counterweight. When this operation is complete, the blade has been moved into the low-pitch position, since the shank of the blade is securely attached to the counterweight mechanism.

Returning the blade to the high-pitch position is simply a matter of placing the valve in the drain position, allowing the pressure on the cylinder to be released. The centrifugal force of the counterweights, acting against the ball bearings in the slot, force the cylinder back, returning the oil to the crankcase, at the same time causing the propeller blades to go into the high-pitch position.

Stops limiting the travel of the propeller blades are incorporated in the counterbalance assembly. It is desirable to have an accurately adjustable stop which can be set independently for the low-pitch and the high-pitch positions. For this purpose a threaded screw with a nut on each end is inserted in the slot of the counterweight, and is prevented from turning by a pin. An extension on the end of the shaft carrying the ball bearing assembly contacts these nuts at each end of the screw limiting the travel of the propeller blade. The limit stop adjustment is made by removing the knurled cap covering the counterweight and moving the stop nuts to the desired position.

The piston on which the cylinder slides acts also as a retaining nut to hold the propeller on the crankshaft. Leakage of oil is prevented by the use of a leather washer. Normally the cylinder moves out and back only once during a flight, so that wear on these washers is negligible.

The propeller blade ends are hollow and are provided with bushings pressed tightly on the end of the blades. Incorporated also in the blade end is a high capacity thrust bearing, designed to take the centrifugal force of the blades, permitting them to rotate about their axis with minimum friction. This force is concentrated on the shoulder of the hub barrel, which is made in halves and bolted together.

The thrust and torque loads of the propeller are taken by a steel spider, machined to fit the bushings pressed into the ends of the blades and acting in addition as a means of centering the blade in the assembly. The location of the roller bearing on the outside of the blade in conjunction with the spider on the inside permits a large roller area without excessive weight.

The inside of the counterweight bracket is provided with forty semi-circular holes, the outside of the blade bushing is provided with thirty-six semi-circular holes. In the assembly of the propeller this makes is possible to use index pins spaced ninety degreees apart and permits the indexing of the counterweight braket relative to the blade in steps of one degree. This in turn, permits the selection of the desired high- and low-pitch angles within the pitch range for which the propeller is designed.

The blades of the Hamilton propeller are made of the usual alloy, and are designed to minimize the stress throughout the entire body and prevent the centralization of strain in one particular portion. The rest of the assembly is of a chrome-vanadium alloy, with the exception of the leather packing washers and the fibre shafing strips. The entire assembly is simple in operation, and presents very little possibility for the development of trouble.

Lycoming-Smith

ANOTHER successful controllable pitch propeller in general use was developed by the Smith Engineering Corporation and now being built by the Lycoming Manufacturing Company.

This propeller is purely mechanical in operation, and presents a clean outward appearance, with the mechanism enclosed within the confines of the hub. The entire power for the pitch changing operation is furnished by the engine through a series of gears operated by the rotating of the propeller shaft. Engaging or disengaging the operating gears in the propeller, by means of a control handle installed in the cockpit, enables the pilot to set the blades at the most advantageous position for a particular flight regime. The gear ratio of the propeller is very high, permitting a movement of the blades which is sufficiently slow as to present no difficulty in selecting the particular blade angle desired.

In the extreme forward portion of the engine crankcase is installed a housing which encloses a stationary sleeve, concentric with the propeller shaft. This sleeve has two worms on its outer circumference ,one left-hand thread, and one high-hand thread. In its neutral position, the worm in entirely out mesh with the gears in the propeller hub, but when moved forward or backward along the propeller shaft the left- or right-hand worm engages the gears in the propeller hub. By virtue of the spiral tooth on the sleeve worm, and the rotation of the propeller, the gear in the pro-

peller is moved one tooth space by the worm for each complete propeller revolution. The direction of the gears rotation is dependent on which of the two worms is caused to mesh with the gear in the hub. Incorporated in the hub assembly is a ratchet stop which assures that the primary gear is always in a position to mash with the worm. This also prevents the gear from moving while the worm is disengaged from the hub mechanism.

As the primary gear rotates, it rotates in turn two worm gears fastened on the same shaft and threaded in opposite directions. These worm gears may not be seen in the illustration, but are located in the corners of the hub at each end of the primary shaft, which extends across the bottom of the hub. These worms mesh with the two cross shafts, seen at each end of the hub, and carrying a central worm engaging the gear teeth on the end of the propeller blade. Incorporated in the mechanism of the primary engaging gear is the blade stop mechanism. When the stationary worm is engaged, the gear rotates the tube on which the gear is mounted through a ratchet clutch on one. A stationary threaded shaft is mounted inside the tube carrying two nuts that are keyed to the tube. When the tube rotates the nuts rotate and travel along the stationary shaft together until one of the nuts pushes the clutch out of engagement with the blade stop gear. The gear continues to turn, but the clutch tube and the worms mounted on the tube, stop rotating.

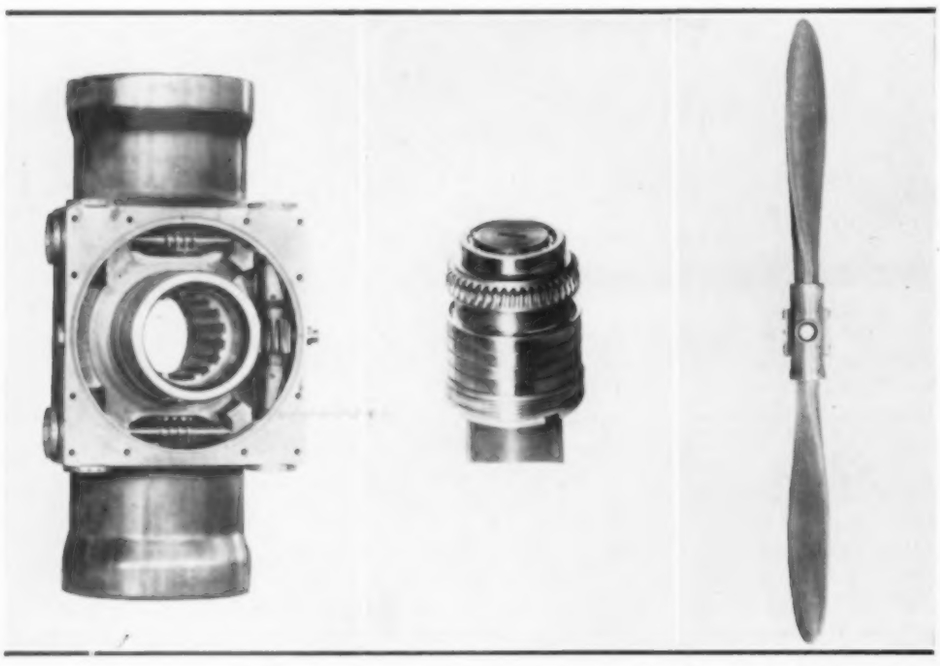
Reversal of the process actuates a clutch on the other end of the blade stop gear assembly, and the disengaging process is the same.

The blades of the propeller are made from chrome vanadium steel and are of hollow construction. A virtue of this construction is that the bearing carrying the centrifugal loads can be located directly on the blade shank, and the buttress threads carrying the bearing loads, and the operating gear can be turned directly on the end of the blade.

The hub of the propeller is made from a chrome vanadium steel forging, and is machined all over. The operation of the two blade hub and the three blade hub is fundamentally the same, except that in the three blade hub, the various bores locating the gear trains are encased in a separate housing, which is located inside the cavity of the hub.

Means of electrically operating the Smith propeller is now available, a pitch indicator being furnished to show the exact position of the blades at all times.

With these two perfected mechanisms, the Hamilton and the Lycoming-Smith propellers, now available for the manufacturer, performance characteristics are possible that have hitherto been deemed improbable. With the production of the units at the point where they can be offered as standard equipment on all aircraft, considerable impetus will be given to private flying. In fact at this time several new production models in the private owner field have made their debut with controllable pitch propellers and are receiving an encouraging reception. We can assuredly look forward to an increased adaptation of this equipment.



Left: The hub of the Smith propeller showing the blade stop gear at the right of the hub. The ratchet stop for this gear may be seen extending out to the right of the hub. Across the top and bottom of the hub are the cross shafts which carry the blade operating worms.

Center: The blade end of the Smith propeller showing the thrust bearings, retaining nut, pitch changing gear and method of attachment.

Right: The Smith-Lycoming two-bladed propeller.

"Not Too Technical"

By George Carroll

Function of Propellers

In the brief space of a few months we have discussed the fundamental aerodynamic principles of flight, giving reasonable stress and attention to the primary factors of airplane design that will permit the craft to take off and maintain level flight. We have seen how efficiency is attained by the application of various principles that have been discovered by experimentation and long years of study and research. But as yet we have not answered the question, "What causes the airplane to pass through the air?' In our previous discussions we have assumed that the power plant turns the propeller and the propeller furnishes the power of traction; yet we have not gone beyond the assumption.

The purpose and function of the propeller is readily understood and appreciated by most aeronauts but in reality there are many individuals even in the ranks of airmen who have never grasped the true function of the propeller, its relation to the engine and its relation to the airplane itself. Too, a great many individuals, classed as "general public" have been misinformed from time to time to the end that they know practically nothing of the importance, the purpose and function of the propeller. It is not at all uncommon to hear the question asked, "Why are two- and three-bladed propellers utilized instead of propellers with more blades?" Consequently it will be necessary to treat the subject in two separate articles, destroying all presuppositions and many misunderstandings concurrently with our not-too-technical discussions of aerodynamic principles.

First of all, it is evident that since an airplane will not fly unless drawn through the air at sufficient speed to produce lift, there must be propulsion or traction of some method. It is of course impossible to receive this traction from any other element except from the medium through which the machine must pass. The development of the propeller was the answer to the problem in the case of craft passing through the air.

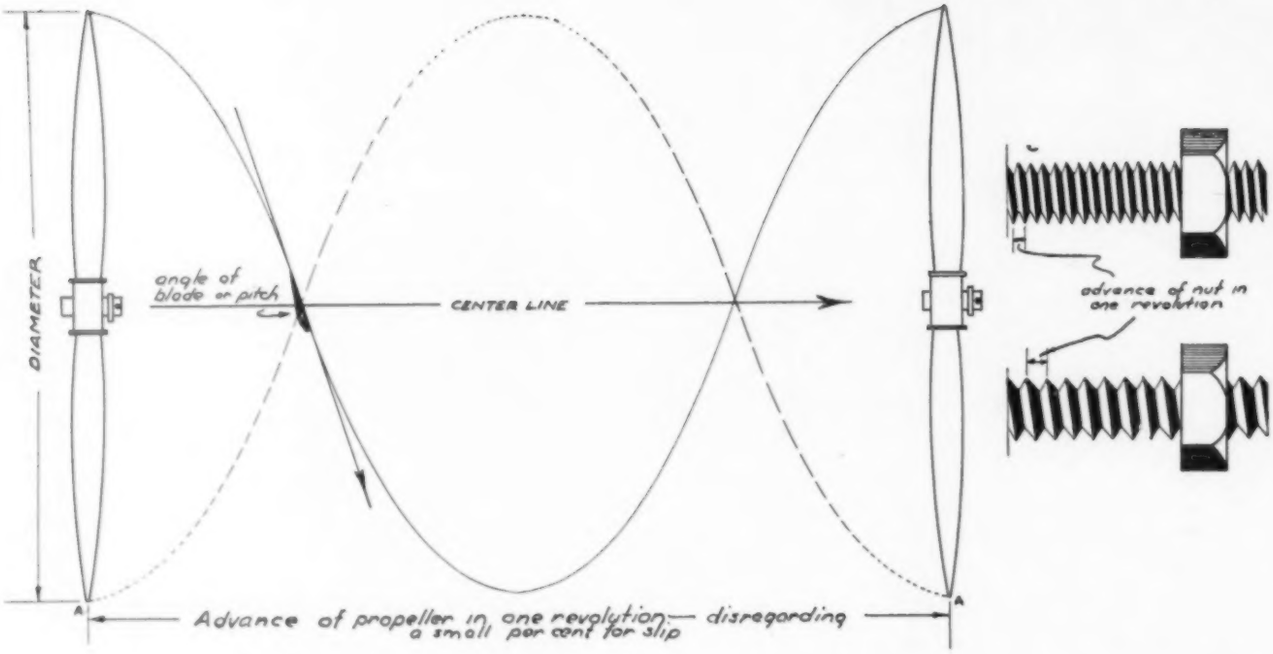
In the early days of aircraft development there were many varied types of propellers which differed in form, in size and in weight and whose speeds were as varied as the sizes and forms. But after all the many designs were produced and made to operate with some measure of success, the net result was no more than the production of a simple air screw that functions not unlike a common screw as it passes under pressure into wood, or a bolt into a nut as illustrated in the figure. Note in the illustration the designation of the advance of more blades?" Consequently it will be necessary to action with the advance the propeller makes in one revolution.

These "air screws" or propellers usually consist of two and sometimes three or more blades which extend outward from a central hub that fastens to the crankshaft of the driving or power unit. The blades are set at an angle to the axis of rotation. This condition is referred to as the *pitch* of the blades. The pitch varies slightly in angle from the hub towards the blade's tip, the greater part of the pitch obviously being near the hub and diminishing outward. It is readily apparent that when the propeller is rotated in a direction that causes the leading edge of the blade to be in a forward position to the trailing edge, that the blade will "bite" into the air, so to speak, producing the same effect as an ordinary nut working on threads as shown in the illustration. When the propeller is turned at a relatively slow speed the air moves out of the blades' path, permitting only a small disturbance to take place about the blades. But as the blades are forced to turn at increased speed, we discover that the air does not move out so readily from the path of the blades, thereby furnishing the effect and action of a large screw, producing the desired thrust that permits the plane to move forward. Note in the illustration the advance of the propeller in one revolution, disregarding, of course, the small percentage of loss through slip.

The amount of thrust developed by the propeller is determined by several methods. First, by the number of revolutions per minute; second, by the propeller's pitch, and third, in some particular examples the design and shape of the blade enter into the problem of determining the amount of thrust.

Recalling previous discussions in our study of aircraft, it will be remembered that small, light planes do not require as large a propeller as the larger, heavier types of aircraft. Let us consider the example of an ordinary light plane designed for slow speed ranges. It is logical to believe that this design would call for a propeller of a relatively low pitch. And, in the case of a light plane built for the higher speed ranges, we find the necessity of a greater pitch in the propeller's blades or else a greater number of revolutions per minute to obtain the speed necessary for sustained flight. All propellers have a range of speed in number of revolutions at which the best results are obtained. It is hardly necessary to develop the necessary thrust by increasing the speed or revolutions per minute of the propeller, as we shall soon discover. It is evident that for the high speed airplane, the propellers will have considerable pitch.

Brief mention should be made of the horsepower required to rotate propellers, even though we do not go very far into this interesting subject at this time. Propellers of great pitch require considerably more horsepower for the desired number of r. p. m. than propellers of the same diameter with less pitch in the blades, since we have noticed that propellers with great amount of pitch will pull through the air, when rotated, a greater distance than those with the lower pitch. This comparative action can best be illustrated by an analogy of a screw with fine threads and a screw


DIAMETER
angle of blade or pitch
CENTER LINE
advance of nut in one revolution
A
Advance of propeller in one revolution — disregarding a small per cent for slip
A

with coarse threads. When each is forced through a medium, it is readily seen that there is more resistance to the coarser threaded screw. The fine threaded screw is therefore comparable to the propeller of smaller pitch.

In various designs of airplanes we find the utilization of two-, three- and sometimes four-bladed propellers. In almost every case of propellers with more than two blades, the design of the airplane will not permit the adaptation of the two-bladed propeller usually on account of their relatively greater length, requiring a greater diameter to produce the necessary amount of thrust. In three- or four-bladed propellers, a certain percentage of the horsepower is sacrificed by the use of the additional blades because of the vortices that are produced about the tips of the blades. Also, the whirling motion of the blades produces a great deal of centrifugal action on the air near the hub of the propeller. Therefore additional blades result in a greater disturbance, producing the loss of horsepower and the consequential loss in efficiency.

In other cases we find that it is necessary to use three or more bladed propellers on account of the greater turning speed necessary for propellers in order to produce the theoretical thrust. The speed of the two-bladed propeller would be far out of range of its maximum efficiency. Thus the three-bladed propeller comes into use, revolving at a much slower speed and producing the desired results with an increase in the pitch.

It is necessary to remember that in every case the propeller must match the airplane and the horsepower. A certain amount of horsepower is required to carry a certain load. A definite type of propeller must be utilized for the specified type of plane and motor. Oftentimes, after the plane has been designed for and fitted with its motor, and after many prolonged calculations and experiments in determining the proper propeller, it is necessary to try out many different propellers to gain the required performance. Since the two- and three-bladed metal propellers are now applied in the majority of cases, it is not necessary to conduct so many separate experiments with different propellers as in the past, since the pitch of the modern propellers can be varied over a large range, usually giving the desired performance.

Should the performance not be affected by the anticipated type of adjustable pitch propellers, it may mean the adaptation of blades of larger or smaller diameter, as the case demands. The fundamental point, however, is that the propeller must be coordinated with the power unit and the design of the airplane.

The recent developments in airplane speeds and the increasing demands for performance characteristics have brought about the development of the controllable pitch type propeller, which permits control of the pitch of the blades while the propeller is in operation. The necessity of getting off the ground over a minimum distance requires a certain pitch, which, it was learned, did not produce the desired propulsion for adequate cruising speed. The result has been the development of the controllable pitch propeller. It is evident from the above that when a fast modern transport plane, for example, takes off with a heavy load, the pitch should be decreased in order to produce more traction. In other words, more square feet of air per minute is required for the thrust at the takeoff. When the ship is once in flight, the motor will show an increase in revolutions per minute, denoting that the airplane is "following up" the propeller. The pitch is then increased by means of the controllable type propeller to the point where the speed of the plane and the revolutions per minute of the power unit reach the desired efficiency point.

(NEXT ISSUE: *The relationship of the propeller to the power unit and to the airplane and consideration of the three elements as a closely coordinated unit*)

News Briefs

Notes From the Industry at Large

Change in Managers of Air Navigation Districts In Southwest and West Announced

The appointment of Lawrence C. Elliott, senior airplane pilot of the Bureau of Air Commerce, Department of Commerce, to the post of Manager, Fourth Air Navigation District with headquarters at Fort Worth, Texas, was announced recently by Rex Martin, Assistant Director of the Bureau in Charge of Air Navigation. Mr. Elliott succeeds G. C. Miller, who will take over the duties of Manager of the Fifth Air Navigation District with headquarters at Salt Lake City, Utah. This latter office has been vacant for several months and W. T. Miller, of Washington, D. C., Chief Airways Patrol Pilot, has been acting manager. Mr. Miller will return to Washington, and in addition to resuming his regular duties, he will supervise the Department's enlarged airway mapping program which was made possible by a recent allotment of funds by the Public Works Administration.

The air navigation district managers are responsible for the operation and maintenance of the lighted and radio-equipped airways that fall within those areas. The Fort Worth District includes the states of Texas, New Mexico, Arizona, Oklahoma, Kansas, Arkansas and Louisiana.

The Salt Lake District includes Utah, Wyoming, Colorado, Nevada, Idaho, Montana, Nebraska, and part of Oregon and Washington.

Mr. Elliott was born in Greenville, Texas, November 16, 1901, and was educated at Texas A. & M. College. From this institution he was appointed a second lieutenant in the Army Air Corps on July 5, 1924, and was graduated the following year from the Air Corps Training School at Kelly Field, San Antonio, Texas. He then was detailed to duty with the First Pursuit Group, Selfridge Field, Mt. Clemens, Michigan, where he served with distinction. He participated in numerous mass-formation flights including a good-will trip to Montreal, Canada, in sub-zero temperature. While at Selfridge Field he won the annual Mitchell Trophy Race for pilots of the First Pursuit Group, which qualified him to fly in the Free-for-All Pursuit Race held at Philadelphia in connection with the Sesqui-Centennial in 1926. He finished second in this contest. In 1927 he was detailed to Brooks Field, Texas, as an instructor, and in March of the following year he resigned to accept the position of airways extension superintendent with the Department of Commerce.

In this capacity he surveyed the following airways: San Diego-Los Angeles; San Diego-El Paso; Los Angeles-Albuquerque; Los Angeles-Amarillo; Cincinnati-Chicago, and Jacksonville-Atlanta. He also conducted a special survey of a Northern Transcontinental Airway which was specially authorized by Congress. Within the past two years Mr. Elliott has been engaging in airway patrol work and experimental and research flying in connection with radio range beacon development.

Mr. George C. Miller was born May 17, 1894, in Douglas County, South Dakota. He served in the Virginia National Guard from 1914 to 1917, after which he enlisted in the Navy, where he remained until 1923, when he was discharged. He had earned a commission, learned to fly and served throughout the war as a pilot. On November 15, 1926, while a resident of Boise, Idaho, he received the appointment of Airways Extension Superintendent with the Department of Commerce. He participated in the survey and developemnt of a number of airways in the West and in April, 1929, the Governor of Idaho appointed him to special duty in connection with the development of the state's airways program. Upon completion of this work the Fort Worth Airways District was organized to take charge of the operation and maintenance of the rapidly-growing airways system in the Southwest, and Mr. Miller was appointed airways engineer in charge. He has remained constantly at this post until the present.

Air Express Continues Increase

L. O. Head, President of the Railway Express Agency, has sent a message to all corporation employees urging them to develop air as well as rail express and to work in co-operation with the airlines affiliated with the Air Express Division of the Railway Express Agency. These lines include United Air Lines, Gentral Airlines, Hanford Airlines, Rapid Air Lines, Pacific Seaboard Air Lines, Bowen Air Lines, Robertson Airplane Service, Delta Air Corporation, Pan American Airways, General Air Lines, Alfred Frank, Braniff Airways, Wyoming Air Service, New York Airways, and Gulf Airways. These companies have carried 139% more express the first six months of this year over last.

President Head, in his message, said: "Yet we have hardly scratched the surface. In April, 3,750 of our air express shipments (30%) either started or finished their journey by rail. Cities as far as 300 miles from our airlines have been contributing this off-airline business. Let us get more of this. Talk air express all along your route! No one is ever bored by being told about what is being accomplished. No one knows when he or she will want to send or receive a shipment 2,000 miles overnight."

Macfadden With I. A. O.

Bernarr Macfadden, publisher, physical culture exponent and airplane pilot at the age of 66 recently accepted the Chairmanship of the National Advisory Committee for the Independent Aviation Operators of

the United States, according to Oliver L. Parks, President of the aviation group and of Parks Air College in St. Louis.

In his capacity as Chairman of the advisory board, Macfadden will actively participate in a nation-wide program for the development of private flying and widespread commercial aviation activities.

Upon acceptance of the position, Macfadden stated that private flying and miscellaneous commercial flying operators should be encouraged by each state as well as the Federal Government in the interests of national defense and the development of a new and potentially great industry that in the future will provide employment to great numbers of people. The development of this phase of aeronautics, which until recent months has received but scant recognition, is vital to the industry as a whole, Macfadden said.

The Independent Aviation Operators, founded last February, now has a membership of over 1,400. Airport operators, flying school operators, repair stations, sales agencies and private fliers are represented. The group was active in drafting the code for the Commercial Aviation Industry, which became effective September 1. They are at present interested in suggestions from every phase of the industry in order to determine and suggest permanent policies for the future.

The new executive offices have been moved to Washington, D. C., in the Transportation Building, where they intend to materially increase the value of their services to the industry.

Straughan Aircraft Sells Plant

Straughan Aircraft Company, of Wichita, Kansas, successful developers of light plane equipment, have recently sold their plant, equipment and materials to Mark Kleedon, President of Black Gold Refineries. The manufacturing plant will be moved to Oklahoma City, where production in the reasonably-priced field is expected to begin within the next few months. Burrell Tibbs, Black Gold pilot, has been placed in charge of present operations.

Reorganization

The reorganization of United Aircraft & Transport Corporation has been completed. Lawyers, accountants and company executives have been working feverishly to wind up the affairs of the old corporation to bring about the reorganization of the parent company so that its manufacturing units will be separate from the air transport affiliates, each unit being a distinct corporate entity.

The three new corporations are United Aircraft Corporation, Boeing Airplane Company and United Air Lines Transport Corporation.

United Aircraft Corporation is the parent organization of which Pratt & Whitney, Chance Vought, Hamilton Standard Propeller, Sikorsky Aviation and United Airports of Connecticut are subsidiaries. Boeing Airplane Company will include the former company of the same name and the Stearman Aircraft Company. United Air Lines Transport Corporation will be comprised of the present affiliates of the Air Line company in addition to United Airports of California, Ltd.

Donald L. Brown, President of Pratt & Whitney, heads United Aircraft Corporation. E. E. Wilson and George S. Wheat are vice-presidents, and Joseph F. McCarthy, Secretary and Controller. Chief executives of the Air Lines company and of the Boeing Company are respectively, W. A. Patterson and Claire L. Egtvedt.

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School Attracts Collegians

A recent check of students who are enrolled for government approved courses at the Ryan School of Aeronautics at San Diego, California, showed that approximately 50 per cent had either had college training or were matriculating at the fall semester in colleges and universities throughout the country. Aeronautical engineering students at accredited universities have found it to be particularly advantageous to combine properly supervised flight and mechanical instruction with the theoretical four or five-year course leading to their aeronautical engineering degree. While some students obtain this flight and ground school training during their summer vacations, others enroll at Ryan for six months of practical contact either before or during their college course and then return to the university for the more extensive and necessary academic and professional instruction which can be best obtained in a well-rounded four or five-year engineering course.

British Air Authority Praises U. S. Aviation

The speed and night flying efficiency of America's air transport system came in for high praise from Captain H. W. Balfour of London, member of Parliament and prominent English aviation figure who recently flew from coast to coast via United Air Lines.

"In the matter of speed," said the visitor, "you're three years ahead of us. We have produced an efficient service with large aircraft on infrequent schedules. You, on the other hand, have developed high speed and frequent service. Our system has offered little encouragement to the development of high speed and night flying. But we are revising our ideas. Executives of nearly every important British aircraft concern have been visiting the United States to study your methods. Naturally, they've been learning something."

New Regulations Governing Maximum Flying Hours for First Pilots on Scheduled Air Lines Announced

Eugene L. Vidal, Director of Air Commerce of the Department of Commerce, has announced the following regulations with respect to the length of time first pilots shall fly on scheduled air transport routes:

One thousand hours per year (which averages about 83 hours per month) will be the maximum flown by air line pilots.

They may fly 100 hours per month, but not for more than four consecutive months;

Every three months they shall be given an examination by a physician designated as an Airline Pilot Medical Examiner by the Department of Commerce to determine fitness, with special attention to fatigue. In the past they have been examined every six months by a regular Department of Commerce authorized medical examiner.

The matter of maximum flying hours for first pilots was included in the new regulations discussed by the Department of Commerce with air line operators and air line pilots at a conference held in Washington on August 15 and 16. At that time the Department recommended a total of 1,000 hours per year but not more than 100 hours in any single month. Operators recommended a greater total and pilots a less total. The Department decided to discuss the matter separately at a later date. The meeting was held recently. All agreed that only specialized medical examiners were competent to determine fatigue.

In announcing the new regulations, Mr. Vidal said:

"The reduction in maximum flying hours per month suggested by the Department of Commerce, over the old regulations, is significant since there is an entirely opposite trend in various European countries to increase the flying hours of first pilots on scheduled air lines.

"We have made a thorough and complete study of the entire matter and our accident records show no concrete case of flying fatigue, even under the old regulations allowing 110 hours per month. However, with the reduced hours and the quarterly physical examinations, we are confident that any question of overwork is satisfactorily regulated. The medical examiners to be designated by the Department will be selected at air line terminals by Dr. R. E. Whitehead, Chief of the Medical Section of the Bureau of Air Commerce, a flight surgeon of many years' experience in medicine and a qualified pilot himself. Our connection with the matter of maximum flying hours is concerned solely with public safety and has nothing whatever to do with labor and personnel problems. Congress at the last session authorized the Department of Commerce to regulate the air lines from the standpoint of safety."

United Air Lines Shows 30 Per Cent Passenger Increase

An increased of 30 per cent in its passenger traffic and 130 per cent in express shipments during the first eight months of this year over the corresponding period of 1933, is reported by United Air Lines. United, in eight months, transported 98,772 revenue passengers as against 76,023 during the same period of 1933. The increase is attributed to the operation of high-speed, twin-engined Boeings, which are forty miles an hour faster than the equipment in service early last year.

Despite the increase in passenger and express business, United Air Lines' gross income is substantially less than a year ago, due to the cancellation of air mail contracts, and the reduced number of schedules in which mail is now being carried under the temporary mail contracts. United is now flying 65 per cent of its total mileage without mail revenue.

Search for Passenger Number 1

Who was Cash Air Passenger, Number 1?

Who was the man or woman who first displayed confidence in air travel by putting hard cash down on the counter and buying Ticket Number 1 for transportation on a scheduled airline?

Pennsylvania Airlines & Transport Company is seeking that individual out of the limbo of aeronautical history, and when he or she is found, intends to do honor to the vision and confidence displayed.

"We are not seeking the stockholder of the first line, nor the mayor nor the journalist who made the first trip as show passengers," C. Bedell Monro, President of the line, said, in inaugurating the search. "The man who bought the first ticket is a figure in the history of air travel, and we would like to fly him to Washington to receive the honor and credit he deserves."

The plan is to receive applications for the honor of being the first pay passenger at the Pittsburgh headquarters of the company, and to pass on these claims to an impartial judge who will decide which was the first air line worthy of the name. This judge probably will be an official of the Bureau of Air Commerce of the U. S. Department of Commerce. He will consider the history of the operation, its personnel, equipment, the regularity of its schedules, its record of accomplishment, and decide what constituted an airline ten or possibly twenty years ago.

It is planned also to present the "winner" with a comprehensive trip over the nation's air transportation system to permit a comparison between then and now. Pennsylvania Airlines would like pictures of the individual, the equipment, airline officials, and whatever else is necessary to complete a brief history of the event, to be submitted with the application.

Ryan Company Announce Reductions

Reductions of $300 in certain models of the new Ryan S-T series have been announced by the Ryan Aeronautical Company, San Diego, California, according to Earl D. Prudden, sales manager. Inquiries have continued to come into the San Diego office from not only every portion of the United States but many foreign countries as well, evincing an overwhelming popular response to T. Claude Ryan's high-speed, all-metal fuselage plane, particularly by sportsmen pilots and commercial operators. It has become necessary for the Ryan Company to place future orders on a ninety-day delivery basis.

It has also been announced that a special sliding all-weather cockpit hood is offered as optional equipment to purchasers of its new Ryan S-T super sportster. The cover, which slides forward when not in use, has been ingeniously designed so that it can be easily operated when in flight. The enclosure can be built to afford protection for either of the tandem cockpits or for both if the purchaser so desires.

Douglas Airliner Dutch Entry

Of the more than seventy high-speed airplanes that will take off October 20 from London for their historical 12,000-mile flight to Melbourne, Australia, in the $75,000 MacRobertson international air race, one plane—an American built transport—will stand out predominately as starting on an epochal flight. That plane will be a Douglas all-metal bimotored 14-passenger airliner virtually identical to those now in overnight coast-to-coast T. W. A. service in this country. Instead of stripping to minimum equipment, highly supercharging its motors and otherwise grooming to air race performance, the Douglas airliner, inherently capable of more than 200 miles per hour steadily, will make its flight on standard equipment, with typical passenger and air mail load as though on regular air line routine.

The entry is being sponsored by Royal Dutch Air Lines (known as K. M. L.), prominent trans-European-Asiatic air line system, as an introductory gesture in Europe, of the new transport aircraft it is concurrently adopting over its entire network. Pilot will be Koene D. Parmentier, number one pilot of the Royal Dutch Lines, an ex-Dutch Army flier who for several years has flown regularly, the 9,000-mile Royal Dutch route between Amsterdam and Java. This is the longest air line route in the world. Parmentier's outstanding performance on this extended schedule flight has earned him the privilege of flying the MacRobertson race.

The airliner, now aboard the S. S. Statendam, will be reassembled on its arrival at Rotterdam and test flown in ample time for the start of the England-Australia competition October 20. Following its Australian flight, the craft will return to Amsterdam for inauguration into regular service as first of a fleet of Douglas ships to go into Royal Dutch Service. Balance of the fleet, now under construction, will follow shortly thereafter, to slash flying time of the K. M. L. lines almost in half.

Sold through its European agents, the Fokker Company of Amsterdam, the fleet of Douglas airliners purchased by Royal Dutch represents the largest foreign order of commercial aircraft on record in the United States.

Plane Brings Three Nations Closer

For more expeditious transportation between manufacturing operations in Akron, Mexico City and Toronto, the General Tire & Rubber Company has just commissioned a Lockheed Vega plane for the use of its executives and sales and production officials. It also will be used for testing streamline airplane tires that the company makes. Above is shown W. O'Neil, president of General, being greeted at the Akron airport, by company officials on his return from Mexico City on the plane's maiden flight. Left to right are: C. J. Jahant, vice president; Robert Iredell, chief engineer; Mr. O'Neil, and Ray W. Brown, in charge of aviation sales, pilot.

Demonstrator to China

Shipment of a Model 281 single-seater, all-metal, Wasp-powered fighter to China as a demonstrator, is reported by the Boeing Airplane Company, Seattle. The plane is similar to the P-26A planes built by the company for the Army Air Corps. It is equipped, however, with trailing edge flaps which, according to measurements taken by the Boeing company, reduce landing speed by approximately eight and a half miles per hour. The engines are 550 h. p. Wasps.

Appointment of Welwood E. Beall as its representative in China has been announced by the Boeing Company. Beall left for Shanghai in August. He formerly was sales engineer for Boeing and, prior to that, was on the staff of the Boeing School of Aeronautics at Oakland.

Parks Students Build Plane

Students enrolled in the Aeronautical School of Engineering at Parks Air College, East St. Louis, Illinois, will be required to assist in designing and building a new airplane, beginning with the Fall term, October 1. The plane will be test flown, its performance characteristics checked, and an approved type certificate sought from the Department of Commerce. The engineering students will have the use of a new wind tunnel of N. A. C. A. design constructed this Summer.

The new method of instruction was adopted with the view of providing students with the same problems that face aircraft factory engineers.

Douglas H. Webber, chief engineer of Rearwin Airplanes, Inc., Kansas City, has been added to the faculty of the engineering school as professor of engineering.

New equipment has been installed for the use of students taking the airplane and engine mechanics' course. Included is a new milling machine, lathe, press, forming machine and electric forge.

Ports of Call

News From the Airports and Airways

Abilene, Texas

Carl Cover, vice president of the Douglas Aircraft Company, was an overnight visitor. He was flying a new Douglas Transport scheduled to fly for Royal Dutch Airlines in the London-Melbourne classic.

Richard DuPont and his cousin Paul DuPont, and wife were recent visitors. Richard DuPont will be remembered for his world's distance soaring record.

Senator William Gibbs McAdoo and members of his official family, en route to Los Angeles, refueled recently. He is a regular patron of the Abilene port.

Captain Nutt and Lieutenants Lannigan and Harding from Kelly Field visited the Terminal a short time ago to inspect a new wind indicator designed by Airport Manager Derryberry. They plan to build a similar one for the advanced training center at Kelly Field.

Many student flights have visited Abilene during the season. August 22, Lifutenants Morgan and Rick with eight pursuit student pilots. August 29, twenty-one student bombers and pursuit pilots with Instructors Colonel H. B. Clagett, Lieutenants J. Smith, R. J. Brown and McCoy. September 5, Instructor Captain Sweeley with twelve student attack pilots. September 6, Instructor Captain Mallory with five attack students. Three other groups will make the port before the flight season closes, calling September 22, 27 and October 2.

It is understod that the Department of Commerce airways radio will soon be in operation.

Beaumont, Texas

The Wing Over Club, under sponsorship of the American Legion, had charge of the DeQuincy CWA Airport opening, on September 2 and 3. Ralph Hall's Travelair, Luther Caruthers' Robin and Lois Neel's Taylor Cub arrived there Sunday afternoon to find a splendid new airport. Despite a pouring rain on Labor Day, passengers were hauled as fast as they could be loaded into the ships. Lois Neel, as "the daring young lady pilot,' was the hit of the show.

Ralph Hall has returned from Greenwood, Mississippi, after a season of cotton dusting and is operating his J-6 Travelair from the local port.

Gene Gray, formerly of the Gray Flying Service here, is home on vacation after a year's flying for Pan-American in South America.

The oldest member of the Wing Over Club, Captain Wm. Henderson, doesn't let his fifty-one years interfere with a snappy execution of the tango, which he gave at the last club party. Cap secured his private license recently and hangars his Buhl Pup at Galveston.

Licenses granted recently at the Beaumont muny port were: Lois Neel and Johnny Walker, privates, and Ellsworth Sims, transport.

Glynne Jones, the old maestro of the Lafayette, Louisiana, airport, came through the other day flying the Robin he pilots for a Louisiana "hot sauce" company.

The first Beechcraft to be seen here came through the other day piloted by W. C. Hart. Another new ship on the field is R. Z. Glass' Lambert Monocoupe.

Lois Neel is now sole owner of the Cub Flying Service, having purchased Wiley Sullivan's interest.

A. H. Duncan soloed the Taylor Cub on the 13th, ran the belt line and bought "solo soda pop" for the gang, thereby maintaining an old Beaumont Airport custom.

The Robertson Airline expects to establish passenger service through here very shortly. Their mail schedules have been consistently maintained since the inauguration of their run between Houston and New Orleans.

D. R. Watson, Houston member of the Wing Over Club, has just finished an interesting trip. He flew a Fairchild 22 back from the factory at Hagerstown, Maryland, stopping en route for the Cleveland Air Races and the Century of Progress. The owner of the ship, Minor Stewart, manager of the Minor Stewart Airport in Houston, was his passenger and co-pilot.

Chanute, Kansas

The returning of Martin Johnson to Chanute was indeed a sad mission. He returned with Mrs. Sherman Leighty to Chanute to attend the funeral services of Mr. Leighty, veteran Santa Fe engineer and father of Mrs. Johnson. Mrs. Johnson was in a New York City hospital, unable to attend. Mr. Leighty met his death in one of the worst train wrecks in years which occurred sixty miles west of Independence when his passenger train collided with a pusher engine returning to Moline after boosting a freight through the Flint Hills. Mr. Johnson and Mrs. Leighty hurried to Kansas City by plane and were brought to Chanute by Tex LaGrone in his Waco. O. E. Dickerhoof, former fireman for Mr. Leighty, is now airport manager.

There are still a few CWA men working on several small repair jobs, cutting grass, and cleaning the windows of the hangar. (And the writer will agree with them that "thar's lots of glass in them thar winders.") City electricians have also removed the high line on the north boundary of the field, a long felt need.

Dick made a recent trip to Topeka with Mr. Stebbins, secretary of the Chamber of Commerce. The members of this organization are all ardent air travelers and have realized profits from time and money saved by traveling by air. Dick flew his Monocoach.

Vern Carstens, pilot for the Johnsons, flew Mr. Johnson to Kansas City, where he boarded a plane for New York to be with Mrs. Johnson. They chartered Dick's Monocoach for the trip.

Jimmy Baker and Albert Payton are doing some minor repair work as the result of a noseover a recent Sunday. Ira Moore, co-owner, says it isn't much fun to unfasten the safety belt and fall out on your head. The damage was slight. (Referring to the plane, of course.)

The Metro Club and school officials at Independence

are sponsoring a class in aeronautics at the junior high school. LAWRENCE MILES, Independence pilot, is the instructor donating his services. The class meets weekly and an elementary study of aeronautics in general is being offered. Class officers are BILL BETTS, HAROLD WHITE and RAYMOND ETTER.

Fort Worth, Texas

R. L. BOWEN of Texas-Louisiana Power Company brings in the latest addition to Meacham Field, an altogether attractive, well equipped, brand-new Stinson Reliant, just recently delivered at the factory in Wayne, Michigan. With the Stinson type air brakes, the Smith controllable pitch propeller, directional gyro, Kollsman sensitive altimeter, conventional compass, rate of climb, turn and bank, artificial horizon and all the necessary engine instrument and radio, Bowen's new Stinson is just about the pride of the port.

GEORGE C. MILLER has been transferred as Superintendent of the Fourth Airways District, Bureau of Air Commerce, to Salt Lake City. He has been replaced by MR. L. C. ELLIOTT, native of Greenville, graduate of Texas A. & M. and former patrol pilot of this territory. Mr. Miller is now attending the conference of District Superintendents in Washington prior to taking up his new duties in the Far West. It will be remembered that he was recently decorated at the Italian Embassy in Washington for his service during the World War. R. H. CLEMENT remains at the District Four offices as assistant superintendent.

MR. J. D. REED, flying executive and part owner in the Texas Fairchild Sales Corporation of Houston, Texas, spent several days of September in Fort Worth and Dallas, demonstrating the new Fairchild. The Fairchild's remarkable maneuverability has been the talk of the port, almost everyone interested having had the opportunity of flying the plane. The advertised performance figures were put to the test—and proved to be correct. Result: several sales and several prospects.

The combined airways weather and radio broadcasting station has been moved from the District Office headquarters on the grounds of the former helium plant to Meacham Field. Operation will be handled by remote control from the district offices, a short distance away.

The well known DUPONT family of Wilmington was represented on a recent visit to Meacham Field. A new Stinson and Fairchild carried the junket, the Fairchild being flown by a member of the fair sex.

REG ROBBINS back from Mississippi. HOMER TRUAX has passed the rigid D. O. C. blind flying test and it is rumored that he will soon be flying airline. Where has MONTY SCHENFDECKER gone into hiding? Tin Geese now flying Long & Harmon's Route 15.

Galveston, Texas

Flying activities are picking up in Galveston and the hangar is rather crowded with nine or ten "permanent guest" ships. Students flying the American Eagle and the Eaglerock include MISS ESTELLE HUTCHINS, a MISS TEMPLE, whose first name we couldn't ascertain, and a MISS BOBBIE, whose last name was equally mysterious. MRS. FAIRCHILD, wife of LIEUTENANT FAIRCHILD, who owns the Eagle, is also on the student list. Other students include BERNARD LEWIS, who soloed last month; E. A. MATULA, JOEY HADEN, JOE FOX, JACK MCCLELLAN, DR. HUDDLESTON and "GORDIE."

Galveston's famous flying family, the HENDERSONS, are piling up the hours in their Buhl Pup. CAPTAIN HENDERSON, master of the S. S. *Ruth Lykes*, managed to find time while ashore to secure his private license. Cap, the oldest member of the Beaumont Wing Over Club, doesnt' let his fifty-one years interfere with his flying. One of his sons, BOB, already holds a private and BILL, "the young 'un," soloed the Pup recently. Don't ask us how he got his dual.

GEORGE HOVEY secured his private recently at the Galveston port.

P. W. KITCHENS, owner and pilot of the other Buhl Pup at Galveston, has fun inspecting the bathers along the beach from the air, when he is not racing the Henderson Pup.

BOB SCHOLES, genial manager of the Galveston port, is very proud of his night lighting, though he has some difficulty in keeping some of the pilots from sitting down (together with their ships) on the boundary lights. Page GENE PARRISH.

BOB very accommodatingly dug out the airport register and we found that some of the visitors during the past month included: JACK PHILLIPS in his Swallow, HOWARD MARTINDALEA flying his Spartan from San Antonio; A. B. ALKIK's Stinson from Victoria. Oil companies were represented by A. G. HENSHAW, Shell, in a Stinson, and BURRELL TIBBS, veteran pilot of the Black Gold Oil Company, Oklahoma City. PARTIN arrived in his Stearman from Shreveport, and two Oklahoma visitors were JOE BATES, Monocoupe, Muskogee, and W. U. PAUL, Oklahoma City, in a Waco cabin.

Kansas City, Missouri

JACK FRYE of Kansas City has been made general manager and vice-president of TWA, Inc. He replaces RICHARD W. ROBBINS as active head of the organization. Mr. Robbins continues as President of Transcontinental and Western Air., Inc., which has now become a nonoperator and leases the recently delivered Douglas Airliners to TWA, Inc.

PAUL E. RICHTER, JR., of Kansas City, who was former operations manager of the line's western division, now is vice-president in charge of all operations, which was Frye's former position. FRANK WILSON, former comptroller is now vice-president and treasurer. LEE FLANAGAN and DONALD WALBRIDGE are assistants to the new operations department head in supervising operations over the western division.

Reporting the "China has gone quite mad over aviation',, MRS. EDWIN H. VINCENT of Kansas City, has recently returned from a visit with her daughter and son-in-law, MRS. and MR. REED KNIGHT... Knight is a flying instructor in the Central Aviation School at Hangchow. Mrs. Vincent's first airplane ride while there was in one of the giant Curtiss-Wright Condors, which are being manufactured in China at the Curtiss plant near the school.

A recent letter from J. CARROLL CONE, executive secretary of the Federal Aviation Commission to Mr. CONRAD H. MANN, president of the Kansas City Chamber of Commerce advised that the date of the Kansas City hearing would in all probability take place between October 2 and November 1. In a personal letter to all secretaries of chambers of commerce in the

Kansas City territory Mr. Mann, has urged the formation of a flying delegation to Washington at the time of the hearing. It is hoped that every town in the Middle West will have at least one plane to represent them, in addition to a complete statement supported by statistics, reports and opinions, setting forth the natural advantages of every part of the Middle West as regards future aeronautical development. The aeronautics department of the Kansas City Chamber of Commerce welcome all inquiries and would like to hear frrom all towns as to the possibility of enrolling airplanes for the flight to Washington.

Lubbock, Texas

All quiet on the Western front until Uncle Sam's flying soldiers swooped down on the Lubbock Airport from azure skies. COLONEL H. B. CLAGETT in a BT2B, LIEUTENANT J. T. FLOCK in an A-3B, LIEUTENANT W. E. WHITSON in an A-3B and in Keystone B5A Bombers were LIEUTENANTS KELLY, POTTENGER, SUMMERFELT, TRAVIS, HOSKIN, EPPLER, UNDERHILL, KING and FLYING CADETS COTE, FISHER, CLAUSEN, HALL, BROCK and STREATER. 'Twas the occasion of a training flight from Kelly Field. Lubbock turned over the keys of the city after MRS. W. C. BREEDLOVE, wife of the airport manager, served delicious coffee and cookies to the military visitors.

E. O. (The Great) SWEDE RHENSTROM flew in with MR. and MRS. P. W. PITZER and sons, PHIL at 4 years and BOB at 16 years, Breckenridge's flying family. The attractive all-white Waco C deserted the West Texas oil fields for the visit which, it was presumed, was occasioned by another Pitzer son playing fullback for Texas University in the Tech game on the 22nd. Pitzer is of the firm Pitzer and West that treats lime wells with acid, brings barrels of lethargic oil to the surface.

The football game also brought in DR. K. K. EASON, his wife and a passenger from Abilene. STEIN LEE, in a Bowen Lockheed, delivered six passengers from down capital way, Austin. WEBB RUFF, manager of the Austin port, matched Stein's quota, also for the Tech game.

JOE TOWLE, pilot for Byrd-Frost of Dallas hangars for the night after depositing his passenger on a ranch near Muleshoe.

Marshall, Missouri

WILLIAM MURRELL recently delivered an NB-8 trainer to Brownsville, Texas, for the Nicholas Beazley Company. He was accompanied on the long jaunt by Pinkey Newton.

The heavy drouth-breaking rains kept THOMAS WEBBER on the ground most of the time during the Warrensburg Fair. He returned recently, apparently glad to get back to the home port.

WILLIAM POWELL experienced a forced landing with his OX Standard when a valve head came off in flight with no other damaging effects. LOUIS RUTTON is covering his plane and will test hop it before the month of September is out. WILLIAM MURRELL and EARL SENTER recently spent a week-end on Bill's ranch in Oklahoma. They flew down and back in the Waco F.

San Antonio, Texas

The Irving Cobb of the Air Corps, MASTER SGT. HERMAN LEVY, is now back at the Air Corps Training Center. He was located at Duncan Field back in the days when Duncan was the Training Center, later spending some time in the Hawaiian Islands. He has of late been spending a pleasant vacation at Corpus-on-the-Gulf.

JACK BERETTA *and* LOGAN STEVENSON, local sportsmen pilots, have been seen recently spending a great deal of time at the controls of Hangar Six's new Kinner Sportster.

VERNON RAMSEY, airport manager prior to the Long & Harman lease of Winburn Field, passed his scheduled air transport rating and is now flying Route 15 for Long & Harman, thus making his holder of every pilot's license issued by the Department of Commerce. Ramsey did some stellar flying recently when his motor quit him just a few hundred feet over Love Field, Dallas, forcing him into a high-line. His first crack-up in 10,000 hours of flying. He escaped with a cut nose.

Two officers of the Mexican army will graduate with the October 15th class at the Advanced Flying School at Kelly Field. If we turn out very many more American-trained Mexican pilots, we need never fear of unpleasant relations with our next-door neighbors.

HAL HENNING, Texas Company; JACK KELLY, Stinson salesman, and BILL LONG, of Long & Harman, were visiting pilots attending the regular Sunday airport event at Winburn Field September 16. The recently inaugurated Sunday events are the result of a concentrated effort of the air-minded to provoke a renewed interest in aviation around San Antonio.

St. Louis, Mo.

Daily passenger service over the New Orleans-Houston route will be inaugurated shortly by Robertson Airplane Service Company of St. Louis. Mail and express service over the New Orleans-Houston airway began on July 25, following the award of a contract.

The westbound plane departs from New Orleans at 12:45 p. m., arriving in Houston at 4 p. m.; the eastbound plane departs at 9:40 a. m., arriving in New Orleans at 1 p. m. Connections are made at New Orleans with planes bound for Atlanta, Washington and New York.

F. H. Robertson, president of the company, has taken up his residence temporarily at Houston.

New residence facilities on the campus at Parks Air College, East St. Louis, Illinois, will be provided for students with the beginning of the Fall term, October 1. The residence accommodations will provide for 170 students—an increase of 45 per cent.

The field house has been remodeled and it will have dormitory accommodations for thirty-five students. The original two-story brick building has also been remodeled and it has twelve additional rooms.

Parks College regulations require all students, married men excepted, to live on the campus.

The college had an increase of 400 per cent in enrollment at the Summer term compared to the corresponding school term of 1933.

Among the larger new ships making recent visits to the Lambert-St. Louis Municipal Airport, St. Louis, were a Navy fighter and a Royal Dutch Air Lines cabin plane.

The Royal Dutch Air Lines ship is a Douglas luxury airliner, similar to the ships built for TWA by Douglas. It was flown to New York City and there it was packed for shipment to Europe, where it is to be put into passenger service. Officials of the Douglas company and Royal Dutch Air Lines were passengers on the transcontinental trip.

The United States Naval Reserve Air Base at St. Louis has been awarded the rating of the second best among the approximately twenty air bases in the country, according to word received from Washington by Lieutenant T. B. Williamson, base commander at St. Louis.

The ratings are awarded on the ability of the personnel to handle their planes and equipment under wartime conditions. The air base, located at Lambert-St. Louis Municipal Airport, was inspected and the men examined in June by a board representing the Navy Bureau of Aeronautics.

Waco, Texas

Airplanes have been selling in and around the Waco territory. W. TADLOCK disposed of his Fairchild last month to CLYDE DANIELS of Lockney. JACK NEWLAND, manager of Waco Municipal Airport, sold his Challenger Robin to an individual who plans to use the plane in passenger service in Nicaragua this Winter.

W. D. MCDERMOTT has just returned from a pleasant air voyage to the East, reporting a most enjoyable vacation and good flying. JACK WEBSTER started on a cross-country to Lake Charles, Louisiana, only to cancel out at Houston on account of severe thundershowers down in the Coast country.

Visitors to the Municipal Airport of recent dates have included W. G. SULLIVAN in the Beaumont Wing Over Club's Taylor Cub, bound for a vacation spot in North Texas; R. A. ARNETT of Cincinnati, Ohio, en route to Austin in his attractive "Mayflower" Waco cabin plane; S. P. GILLEY of Houston on a taxi trip in his Bellanca; GLOVER S. JOHNS in his Airster en route to Steiner from Austin; P. C. JACKSON of Houston bound for his home port from Colorado Springs in a Waco C; C. H. LEWIS of Denver, Colorado, returning from a vacation in Wharton in the Hisso powered Waco.

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Editorials and Comments

(Continued from page 5)

ground transportation facilities were included in the report of Mr. Rex Martin, who is acting Director of Air Commerce in the absence of Eugene Vidal, who is indisposed with influenza.

Regular active military duty for all air transport pilots and one year service as airline co-pilots for all Army combat fliers was advocated, thus permitting the interchange of experience, which it was stated, is essential as revealed by the Air Corps' experience in carrying the mail after cancellation. The need for government support in the promotion of private flying was termed "difficult to exaggerate." Government agency loans to individual aviation operators were advocated.

Federal maintenance of all airports was suggested by Mr. Inwood, spokesman for the Independent Aviation Operators. Opposition to aviation control by the Interstate Commerce Commission was voiced on the grounds that the group is not technically trained for the field. Complete control of civil aeronautics should be vested in the Bureau of Air Commerce. The need for a unified air service was explained because all phases of activity are competing with each other for congressional appropriations and favor. It was vehemently advised that a permanent Federal Aviation Commission of five members be appointed, three of whom would be Assistant Secretaries for Aviation of the War, Navy and Commerce Departments.

From the foregoing testimony, delivered by competent individuals during the first two days of the Commission's hearing of testimony, it is apparent that over a short period of time an overabundance of material will flow into the Commerce Building for the serious deliberation of the President's chosen group. It is not difficult to fully appreciate now, more than ever before, the magnitude of the tremendous task and responsibility placed upon the shoulders of the Commission. It will be necessary for all those eager to place their testimony before the group to bear a part of this responsibility by using judgment in the preparation of material. Extraneous matter and insignificant detail must be omitted. Repetition is one of the most formidable spectres jeopardizing a smooth functioning body. All legitimate representatives will be heard. Their testimony can either be a great help or a hindrance depending largely upon the manner in which the material is prepared.

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Cerro Chino

(Continued from Page 11)

the Southwest Texas Archæological Society, knows the Big Bend's colorful history that dates back into the days before the Spanish Conquest. She proudly displays her magnificent collection of native bric-a-brac and basketmaker material. The visitor is regaled with tales of life on the last frontier. The greatest treat of all is the occasion of "Uncle Tom" Miller's visits with his tales of the "damned old buffalo skinners."

Practically every important figure in the Army Air Corps has at some time or other dropped in at the Johnsons'; the air register reads like a roster of the aviation branch of Uncle Sam's Army. Cross-country trips to Cerro Chino from many of the Southwestern training fields and tactical units are a part of the flight training program.

An attempt is being made to establish a national park in the Chisos. At the present time it is a State park. Six hundred Civilian Conservation Corps workers are now busy in the Big Bend, making permanent roads through the mountains. A PWA project is on foot specifying the building of a huge dam in the Mariscal Canyon below the ranch, which will, when completed, form one of the largest artificial lakes in the Southwest.

It is not difficult to fly to Johnson's Cerro Chino. Look at any large scale map of Texas. Down in the southern tip of Brewster County there's a point where the Rio Grande turns back north from its southern course on its way to Del Rio and the Gulf. The Johnsons live six miles up the river from this abrupt turning point. The Grand Canyon of Santa Helena is farther up the river about twenty-five miles. Between the mouth of this great canyon and Cerro Chino is the trading post of Castolon, easily distinguishable by the mountain peak to the north, by its adjacent cultivated fields along the river, and the one prominent building, a lengthy affair, erstwhile Army barracks back in the days of Mexican trouble on the border. Fourteen miles down the river from Castolon as the road winds is Johnson's Cerro Chino. The big square ranch house and the cultivated fields along the river are apparent landmarks.

Flying south from Alpine, the aviator passes over Terlingua, its clusters of massive rock and small *adobe* huts, on down to the Santa Helena Canyon's mouth. Flying south from the town of Marathon, the flier skirts San Vicente, whence he pursues his course upstream past the beautiful Mariscal Canyon and finally into Cerro Chino six short miles away.

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The World's Greatest Land Plane

(Continued from page 13)

movies aboard, using both sound projecting and sound recording apparatus. A searchlight of 2,800,000 candlepower is attached to the nose of the plane. In order to satisfy the power requirements for the plane, two gasoline-driven generators have been installed, producing an alternating current of 120 volts used for the first time in the history of aviation. Effective floor space of the plane is approximately 120 square yards (1,080 square feet). The total length of wires on the ship is 39,370 feet and the ship is capable of carrying 14,000 pounds of freight.

Nineteen Thousand Miles

(Continued from page 17)

and cordial manner was characteristic of all with whom we came in contact. We were particularly impressed by the effectiveness with which policemen handled traffic. We did not hear a traffic officer raise his voice, much less "bawl out" some unfortunate pedestrian or auto driver for infraction of regulations.

We found the United States well represented by its ambassadors and ministers in every country visited. Ambassadors Gibson in Brazil, Wedell in Argentina, Sevier in Chile and Daniels in Mexico are doing a great deal to further American relations abroad and are, in addition, universally well thought of by the people. In Santiago we were the guests of Mr. and Mrs. Sevier, Texans by the way, and in Mexico, D. F. we were the guests of Ambassador Daniels.

An observation that might interest many southerners was made at Natal, Brazil where cotton planters contemplate doubling their acreage next year because of the reduction of acreage in the United States. In many sections of South America, cotton is a perennial; it is planted but once in seven years and of course their cost of production is far less than in our country. Down in Chile we flew over a beautiful little valley devoted to cotton production. We were told that the inhabitants of this valley would experience unusual prosperity this year, inasmuch as they would receive the equivalent of $1,250,000 for their cotton crop. In all of the countries we visited, crops appeared to be in good condition and it was evident that conditions were constantly improving. Exchange rates, too, are improving and prosperity seems not far distant.

Only such an air voyage can open one's eyes to the opportunities that exist for the United States in Latin America. Only such a flight can impress one with the importance of the Pan American air system in effecting closer trade and political bonds so necessary to economic stability and peace between South and North America.

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From Washington

(Continued from page 15)

receiving set as a substitute for the headphones or loud-speaker.

"The message to be sent is typed or written on a strip of paper tape," Mr. Martin said. "The typewriter characters should be bold, or if handwriting is sent, a broad lead is preferable. The tape with the message is led into the transmitting set where the scanning beam passes rapidly over the letters and causes radio impulses to be broadcast. At the receiving end the impulses are translated into extremely narrow black lines which make up the separate letters of the words. The scanning beam passes over each letter numerous times—thus, the character appearing on the tape in the receiving machine is made up of a similar number of tiny black lines.

"The system sent seventy-six words a minute during the tests. Its peculiar advantage over other systems of radio transmission in which written or typed messages are reproduced automatically is that the messages can be sent through static or heavy background noise, and still be legible at the receiving end. Static will not produce errors. It sometimes blurs some characters but the message is invariably distinguishable."

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